THE MEDICAL JOURNAL OF AUSTRALIA.

Vol. II.—2ND YEAR. SYDNEY, JULY 3, 1915. No. 1.

Back to Lister.

Being a Lecture Delivered on March 12, 1915, at the Royal Institution, London,

By **Sir Rickman J. Godlee, Bart., K.C.V.O., M.D., M.S., etc.,**
President of the Royal College of Surgeons of England.

When Sir James Crichton-Browne, amongst whose many charms is a singular felicity of phraseology, invited me to undertake this task, he kindly supplied the title. It sounded rather startling, but as I could not think of a better, I humbly accepted it. It shows that I have no great discovery to announce, no new theory to propound, but only to take you back over old, well-trodden ground, to try to interest you in very technical matters, and to suggest that, in this particular case, reaction has overstepped the bounds of moderation, and that, as in many other fields, the modern ideas are not always the best.

I will not trace the various step by which Lister was led to his conclusions about the causes of suppuration and hospital diseases, nor draw a lurid picture of the deplorable mortality from these diseases before the introduction of the antiseptic system of treatment. I must, however, give you a short account of his first antiseptic method, which was founded on the discoveries of Pasteur, and explain in what way and for what reasons he afterwards modified it. If I succeed in making this clear it will be easy to understand how the relinquishment of much that he at first considered essential, but which later discoveries proved to be superfluous, led others to give up still more—much more than he ever considered it prudent to do. It will then be maintained that what he feared has come true: that the results obtained to-day, good though they are, are not so good as they would be if we were to return, perhaps not altogether, but almost, to those simpler and safer methods which Lister employed at the end of his active career.

Let us begin by trying to place ourselves in Lister's position during the years preceding 1865, when the writings of Pasteur were first brought to his notice. It was that of every thoughtful surgeon in those days. Of all the dealings of Providence with men—remember, I am speaking of sixty years ago—not the least mysterious appeared to be the ordinance that the life-giving air, heaven's blessed breeze, without which life cannot be maintained for more than a few minutes, and on the purity of which man's vigour depends, should carry in some unexplained way the seeds of death and disease, being one day the doctor's greatest friend and the next his deadliest foe.

Physicians were quite sure that the acute specific fevers, such as scarlet fever and measles, were carried on the wings of the wind, and few had any doubt that cholera was borne by the same vehicle. Surgeons were equally certain that erysipelas should be placed in the same class as the acute specific fevers, and that the suppuration of wounds depended upon the same agency. It seemed quite obvious to anyone who thought about the difference in the behaviour of simple and compound fractures, that is, fractures with unbroken skin and those which are complicated by the presence of a wound. Except for this complication, the fractures might be identical, but, in pre-antiseptic days, the presence of a wound was almost certain to lead to suppuration of a serious, if not a dangerous, nature.

Old Glasgow students speak of Lister contemplating a simple fracture of the leg; the muscles torn and pulped, the limb swollen and shiny, black and blue, and pointing out to them that all this destruction of tissue and extravasation of blood would be surely and safely dealt with by the kindly influences of nature; but that the admission of the air through the smallest wound in the skin would completely change the prospect; the extravasated blood would soon stink, the injured tissues—bone and muscle—would die, and suppuration would take place, which might possibly infect the whole system. It did not enter into the mind of anyone, therefore, to doubt the morbific influence of the air. It was one of those things which appear so obvious that, for a time, they form the very foundations of belief, such as that the earth is flat and that the sun rises, matters which in more barbarous times laid sceptics open to the rigours of the Inquisition.

This was still the universal belief when Pasteur's discoveries were made known. Pasteur put the finishing touch to the work of many observers, who, during the first half of the last century, had been striving to find out what there was in the atmosphere which gave rise to fermentations of all sorts, and amongst others to that form of fermentation known as putrefaction. So long as fermentation and putrefaction were looked upon as chemical processes it was natural to suppose that one of the gaseous constituents of the air was the cause. But clear thinkers, like John Hunter, saw that this could not be the case.

There are two surgical conditions that prove this:—

(1) If a rib be broken, and a sharp fragment injures the lung, large quantities of air may pass from the lung into the pleural cavity, but if the lung be healthy, decomposition never occurs in the putrescible fluid that is always present in the pleura in small quantity.

(2) If air passes into the cellular tissue of the body, as it sometimes does after the same accident, or some other injury of the air passages, large portions of the body may be distended by it to an extent that appears alarming. But again, as the air is effectually filtered on the way, decomposition does not occur and the evil result is only a temporary, mechanical one.

Investigators, therefore, began to think that the cause of fermentation must be something solid and possibly living; something so small that it eluded their highest magnifying glasses, and so they adopted different lines of attack.

Some calcined the air, some filtered it, some passed it through caustic fluids. There was an old French confectioner named Appert—Citoyen Appert, in the time of the Republic—who anticipated by many years the work of our modern fruit preservers. He succeeded in preserving all sorts of food in well-corked bottles by boiling them for various lengths of time, according to the particular article he was dealing with; and his results were so nearly uniform and so remarkable, from an economic as well as from a scientific point of view, that they attracted the attention of the French Minister of the Interior in 1810, and also of the Académie Française.

Unscientific as these observations were, they gave an impetus to the work of chemists and biologists, who carried out an enormous number of really scientific investigations in consequence. These were repeated by Pasteur, who made countless others of his own, of marvellous ingenuity. The results of his labours in this particular field before 1865 may be given in a tabular form. He showed that:—

(1) Putrefaction is a species of fermentation.

(2) It is caused by the growth of micro-organisms, and does not occur independently of them.

(3) The micro-organisms that produce fermentation and putrefaction are conveyed by the air on the dust that floats in it.

(4) These micro-organisms can be destroyed by heat and other agencies, or separated by filtration.

(5) Certain recognizable organisms produce definite and distinct fermentative processes.

(6) All of these organisms require oxygen. Some of them flourish only in the presence of free oxygen (ærobic), others only in its absence (anærobic). The latter acquire their oxygen from the bodies which, by their growth, they are causing to ferment or putrefy.

(7) Many natural animal and vegetable products have no tendency to ferment or putrefy even in the presence of oxygen, if collected with proper precautions and kept in sterilized vessels.

(8) Spontaneous generation has never been observed to occur, and thus may be regarded as a chimera.

Now it will be observed that Pasteur's work presented Lister with two great fundamental facts:—

(1) That putrefaction is caused by germs which can be destroyed by heat and chemicals, and separated by filtration.

(2) That germs are carried by the dust in the air.

It is true that both Pasteur and Lister did not fail to recognize that if the air carried the germs it must deposit them upon the surface of everything, and that therefore the surface of every solid and the whole of every liquid must be, or might be, infectious. It is also true that Lister bore this in mind, and acted on the assumption that it was true from the very first. But still it was the air to which he paid and directed most attention—more attention, as we shall see, than it deserved. He probably did not recognize, he certainly did not say, that his precautions with regard to other sources of infection were far more important than those which he took with regard to infection from the air.

The sceptics and cavillers, the believers in spontaneous generation, kept saying, "Show us your germs in the air." They did not doubt that organisms were found in putrefying substances, they could not do that; but they said that they might be accidental, the result of putrefaction, not the cause of it, and asked for proof that germs existed in the air. Pasteur had tried to meet this objection by filtering the air through gun-cotton, which he afterwards dissolved and submitted the solution to the microscope. There were certainly objects which he was satisfied were germs, but the doubters were still unconvinced.

A few years later, about 1869, John Tyndall, whose eloquent addresses on "Dust and Disease" were listened to with breathless attention in this hall, succeeded in showing to the naked eye of untrained amateurs, the existence of, and the amount of, floating dust in any given sample of air, by passing through it a concentrated beam of light. Next he showed that, if the air was left undisturbed, say in a glass flask, the dust settled, and there was nothing for the beam to illuminate. Then he produced the same result by filtering the air, or by raising to a great heat a piece of platinum wire passing through the flask, which burned up the dust. Finally, he proved, by a series of charmingly simple experiments, that what he called optically pure air was incapable of setting up decomposition in putrescible fluids, whereas optically impure air invariably caused them to decompose.

Most of these facts were known to Lister in 1865. All the evidence pointed in the same direction; and, therefore, stated in the simplest way, the problem seemed to be to kill the germs which might have gained access to the wound before it came under treatment, and to prevent the air from carrying in others afterwards.

He first applied what he now called the antiseptic principle to compound fractures, injuries which, above all others, were liable to be followed by those hospital plagues—pyæmia, erysipelas, and hospital gangrene.

He had to choose between the three recognized methods of excluding the germs—filtration, calcining, and chemical antiseptics—and he naturally selected the last as the most convenient. The first antiseptic he tried was carbolic acid, and, as the crude sample he first worked with was insoluble in water, he used it undiluted.

His plan for treating compound fractures was, after cleansing the wound, to sponge the whole of the raw surface with this undiluted crude German creosote, in order to destroy the germs introduced by dirt or other foreign material at the time of the accident, or that, as he supposed, had been carried to it by the air. The carbolic acid, mixed with the blood, caused an antiseptic crust, which he fortified by covering it with a thin piece of block-tin, and this crust effectually prevented the

access of unpurified air to the wound; for he left it undisturbed for days or weeks, and painted the outside with more of the undiluted acid from time to time.

I wish to impress upon you that in the earliest dressings he used a very strong antiseptic, and did his best absolutely to exclude the air, and it is important to note that his results were strikingly good, in spite of the fact that the undiluted acid did actually cause a certain amount of superficial sloughing —or death of the tissues—in the parts to which it was applied. As time went on a purer carbolic acid was obtained, which dissolved in water, so he abandoned the caustic undiluted acid in favour of a saturated watery solution: 1 part to 20.

He soon extended the treatment, first to abscesses and then to ordinary operation wounds. The old antiseptic crust was soon given up, and various dressings containing carbolic acid or other antiseptics were employed instead. But for a long time he was so anxious about the air that he irrigated the wound with a solution of carbolic acid in water throughout an operation, and took the most elaborate precautions against allowing any air that had not been submitted to the influence of carbolic acid to reach the wound at the changing of the dressings. He used to say that merely taking out a drainage tube without antiseptic precautions involved a serious risk, because the air which rushed in to take its place might carry some speck of dust and a germ along with it.

In his most palmy days, when he was professor of clinical surgery at Edinburgh (1869-77), and Edinburgh was for the time the surgeon's Mecca, he introduced the spray in order to deal still more effectually with the air. In its most highly developed form, the steam spray-producer threw a copious vapour, which was supposed to contain one part of carbolic acid in forty of water, that surrounded the whole region of the operation, and, if the room were small, might even fill the whole apartment with a pungent vapour, to the great discomfort of all concerned. He thought at the time that the momentary contact of the dust with the particles of carbolized water in the spray, or the carbolized atmosphere between the drops would be enough to destroy the germs; but in after years he owned that such a result was impossible.

At this period, though he was still using strong antiseptic lotions very freely, his results were yet more remarkable; and in the meantime, relying on the antiseptic principle, he was doing new operations which, without it, he would have considered to be altogether unjustifiable.

In spite of this, as you know, Lister's treatment, though hailed with acclamation abroad, met with a very ungenerous reception in this country. His compatriots could not understand the great principle that underlay it. They said that there was nothing new in it, or, if there was, it was bad. They said that their results were quite as good as his, or, if they were not, it was only because he paid so much personal attention to his cases. They gave the treatment silly names, showing that they had not grasped the meaning of it; at first it was the "carbolic treatment," now it was the "spray and gauze treatment." This last name was even adopted by Lister's disciples, and thus the spray came to be regarded as a fetish to such an extent that anything which cast a doubt upon its infallibility sorely tried the tender faith of the converted.

But increasing knowledge forced Lister to alter his own beliefs, and greatly to modify his practice in the two particulars to which I have especially directed your attention. Thus he more and more diminished the strength of and the amount of his antiseptics; and, having become gradually convinced that infection from the air, far from being the greatest source of danger, was a negligible quantity, he gave up the use of the spray for good and all.

We must now inquire how this came about. Lister always looked upon an antiseptic as a necessary evil, because he saw that anything strong enough to kill germs must damage the living tissues. Therefore, in quite early days, he tried to do without antiseptics altogether, or at all events to admit nothing of the sort to the wound after the operation was finished. He also recognized from the first that healthy-living tissues had the mysterious power of preventing the growth of micro-organisms; and that this protective power was diminished by anything that lowered their vitality. He further pointed out that the vitality of the tissues varied in different individuals and in different parts of the body, as was illustrated by the well-known fact that healing takes place more readily in infancy than in old age, and in the face than in one of the limbs. The true meaning of this power was not then known. The explanation was given by the marvellous discoveries of Metchnikoff, which Lister's own work prepared him to receive, when they were made known to the world.

Everyone now is familiar with the word "phagocytosis," but have you, ladies and gentlemen, really grasped its meaning? It is a sufficiently appalling thought that each one of us, who looks upon himself as a single individual, is only a huge joint stock company. We carry about with us millions and millions of other individual organisms—micro-organisms indeed—but each one endowed at least with life and definite individual functions. Some of them are apparently essential to the success of our bodies as a going concern. Many, even of these, are only waiting for some interference with the vitality of a part, or the whole, of our body, to afflict us with local or general disease, and finally to dissolve us into our elements.

Metchnikoff showed how these malignant organisms are kept at bay. Our very own body is made up of cells, each of which has, so to say, its individual existence and its special functions—almost its special intelligence—a fact which Lister was one of the first to demonstrate. Hosts of these cells —Metchnikoff's phagocytes—form, some of them, our main mobile army of defence. They are not like other defensive cells, such as those of the spleen and bone marrow, confined to their fortresses, though, as a rule, they keep their allotted positions. But they can move along strategic railways to any special point of attack, and when they have reached

it, there ensues a battle royal with the invading army of pathogenic organisms, which they try to swallow, and, if possible, to destroy. If they are successful, health is restored. It may mean the aborting of a cold in the head, the subsidence of a pneumonia, or the rapid healing of a cut. If, on the other hand, they are overpowered by the invaders, the catarrh may extend to the smallest bronchi, the pneumonia may end fatally, or the wound may suppurate, with diastrous results.

These illuminating facts turned the attention of surgeons into another direction; and seeing that everyone knew that the vitality of the phagocytes must be impaired by any mechanical or chemical injury, the tendency was to reduce the strength of the antiseptics and to trust more and more to the phagocytes. Lister himself used weaker and weaker antiseptic lotions, but he never thought it wise to dispense with them altogether. Others, however, being chiefly obsessed with the notion that chemical antiseptics diminsh the power of the phagocytes, maintained that their use should be altogether discontinued, and have adopted, or say they have adopted, a treatment which, though having the same object as Lister's, is supposed to be founded upon a different principle. How far this is actually the case it will presently be our business to inquire

This was one of the reasons why it began to be said that Lister's teaching, like the Old Testament, was obsolete, and must be replaced by a newer and more perfect gospel.

We must now further consider how far the air is really a source of infection. In the early days it was said that the number of germs in the air was enormous. As a matter of fact, such a statement is still true, as is easily shown by exposing a plate of cultivating medium in any room, say in the most up-to-date, modern, operating theatre.

It was also taken for granted that the large majority of germs were pathogenic—that is, disease producing. But very little was known, in 1865, of the varieties of micro-organisms. It is true that Pasteur had isolated various yeasts or ferments, and had shown that some organisms were ærobic and some anærobic, and that the words vibrio and bacterium were beginning to be used. But as time went on two very important facts were made out. First, that only a small proportion of the flora of the air was pathogenic; and, second (and this was one of Lister's own discoveries), that great dilution of a septic fluid very much diminished its chance of infecting a putrescible medium. Thus typhoid pollution of the Nile in a few miles ceases to be a source of danger, and one or two septic organisms introduced into a vessel of blood serum will fail to grow. It is really masses of particulate dirt which are dangerous, because they contain colonies or organisms adequately protected from attack. And, if this applies to attempts at infection of vessels containing blood serum, still more does it apply to the dropping of isolated staphylococci and streptococci on to a wound where the greedy phagocytes are lying in wait to devour them. At every operation scores of germs fall upon a wound—hundreds if it be prolonged—but most of them are those of moulds and other innocuous vegetables which have no chance of growing there; and although there is a possibility of an occasional pathogenic organism being among the number, the risk of its developing is so small, that it is now generally considered to be negligible, and that if one or two should escape into the lymph channel, they will never elude the phagocytes in spleen or bone marrow or elsewhere.

I must now explain how the spray helped to prepare Lister for the acceptance of Metchnikoff's discoveries. I said it was unpleasant for all. There were some surgeons to whom it was positively poisonous. Amongst these was a friend of Lister's, Thomas Keith, the ovariotomist, whose field of operation was, of course, the peritoneal cavity. In pre-antiseptic days he had obtained results that had astonished the world, by dint of great dexterity, devoted personal attention, and scrupulous regard to cleanliness. His success tried the faith of some, but not of Lister, who was aware of the specially high vitality of the peritoneum, and of other anatomical and physiological peculiarities which diminish the chance of survival of germs, but which are too technical for discussion here.

Keith's success was so great that he hesitated to adopt rigorous antiseptic methods, and Lister at first dissuaded him from doing so, fearing that carbolic acid might dangerously interfere with the vitality of the peritoneum. Besides, at that time, he did not fully trust the efficacy of the spray. Keith did, however, for a time use all Lister's methods, including the spray; but this seriously interfered with his health, so he abandoned it, and yet, when he gave it up, his results continued to be as good as when he was using it.

The germicidal powers of the peritoneum are great, but they are only in degree greater than those of muscle, fat, and other tissues. And when it was found that other surgeons, some of them keen disciples, were absolutely forced to give up the spray, or give up surgery, and that, when they chose the former alternative, their results were no worse than before, Lister at last came to the conclusion that the spray was unnecessary, even if it had really made an antiseptic atmosphere, but, as I said before, he now saw that this was impossible. The spray was really only a convenient, unconscious, automatic irrigator. It killed germs on the wound, not in the air, and as such had been very useful during the time when the lesson was being gradually learned that every surgical operation, every surgical dressing, is, in fact, a complicated bacteriological experiment.

The mitigation of the strength of the lotion and the abandonment of the spray seemed to some like lowering the standard. But it was not so. It was not so because the principle remained unshaken, namely, that as organisms are the cause of putrefaction they must be excluded from a wound, or if they had gained access to it they must be destroyed or prevented from growing. Two changes of method had indeed been introduced: weaker antiseptics were employed because greater respect was paid to the defensive powers of the body, and the spray was

given up because opinion had altered with regard to the importance of ærial attacks. Air-craft came to be disregarded, while it was seen that what may be compared to land and water attacks were far more dangerous. The germs on the skin of the patient, the dirt on the hands of the surgeon, the unpurified sponge, the dried clot on a badly cleaned instrument; these were the dreadnoughts and submarines; these were the sappers and miners, the howitzers, and hand-grenades that really decided the fate of the campaign. Thus it became obvious that the precautions taken against such sources of danger, which, though they were adopted from the first, had been overshadowed by the attention devoted to the air-raids, were really of far more vital importance; and much ingenuity was thenceforward devoted to devising means for purifying the skin by mechanical or chemical means, to inventing gloves which would not impair the sense of touch, and also to proving that there was a radical difference between aseptic and antiseptic surgery.

We now come to the question of what is meant by aseptic as opposed to antiseptic surgery. Aseptic is no new word. Lister employed it quite early in his writings, and, though it is plain to see why he called his system antiseptic, it is almost to be regretted that he did not call it aseptic. It would have prevented the confusing suggestion that, as Hunter and others had spoken of and used antiseptics, his system was nothing new, and perhaps it might have saved us from the still more confusing suggestion that there is some fundamental antagonism between aseptic and antiseptic treatment, though they are really the same.

Those who call themselves aseptic surgeons maintain that they do not employ chemical antiseptic agencies. The idea started amongst the gynæcologists who, as has been shown, were working under peculiarly favourable conditions as regard asepsis. They were supposed to use only mechanical means in striving after cleanliness—washings and scrubbings and so forth, which do, of course, remove the deadliest form of danger, particulate dirt. But even these surgeons, or some of them, used to employ freely the most potent of all antiseptics, heat. They boiled their instruments and boiled the water with which they washed out the peritoneal cavity, and some were in the habit of using a pretty powerful antiseptic, sulphurous acid for purifying those most dangerous things, sponges.

Let us now watch an aseptic surgeon at work. Somewhere in the background there must be a very large sterilizer for superheating overalls, caps, veils, towels, dressings, and bandages; also a boiler for boiling instruments, and an unlimited supply of boiled (he calls it sterilized) water and normal salt solution.

He spends a long time in scrubbing his hands in soap and water, and probably in spirit of wine, which is an antiseptic; he then puts on his sterilized overall, cap, veil, and india-rubber gloves. Thus, converted from a dangerous into a harmless character, he ought never to touch any contaminated object. But it is to be feared that he sometimes forgets the meaning of his vestures: that he wrongly looks upon them as armour, and, inspired by this confidence, he touches the unclean thing, and then puts his fingers into the wound.

One may be forgiven a passing smile at the unreasoning way in which these details are followed out. Surgeons dress themselves up like white-robed priests to examine the external ear, or to explore those parts of the body that no process on earth can render even approximately aseptic.

But to return to our aseptic operation. The instruments, having been boiled, are commonly placed in a tray containing boiled water. Why I have never been able to discover. They would be equally safe if used dry. Probably it is only an imitation of Lister's plan of sterilizing his instruments in a tray of carbolic acid lotion.

The patient's skin is almost always purified by a chemical antiseptic, sometimes alcohol, but now usually tincture of iodine. The part to be operated on is then surrounded by superheated dry towels, and the operation proceeds. Superheated swabs have replaced marine sponges. No antiseptic is applied to the wound. Plain boiled water or boiled saline solution is used for washing away clots; preferably saline solution, because it does not interfere with the living cells by osmosis as plain water does.

When the operation is over, a dressing of superheated gauze and wool is fixed by a superheated bandage or by plaister. This, of course, only acts as a mechanical filter of dust, but it is now looked upon with reverence, as if it had some other special virtue, and you may see it applied with extraordinary precautions to septic suppurating wounds, and kept on for twenty-four hours, regardless of the fact that it becomes a septic dressing immediately after application; that it is, in fact, nothing but a beautifully whitened sepulchre full, if not of dead men's bones, at all events of all uncleanness.

Some aseptic surgeons apply their principle to compound fractures, and rely solely on mechanical means for removing dirt from the recesses of the wounds; but most, I believe, continue to employ powerful antiseptics for this purpose, and in this class of injury follow Lister's instructions.

I am not so ignorant or bigoted as to suggest that so-called aseptic surgery is a bad way of treating wounds. I know that first-rate results are constantly obtained by means of it. But, I maintain, and here I am repeating what Lister has often said to me:—

(1) That it is a troublesome and difficult process, involving for successfully carrying it out an amount of paraphernalia and an amount of training that puts it almost beyond the reach of all except hospital surgeons.

(2) That it is misleading to set it up in opposition to the antiseptic system, because most of its advocates use chemical antiseptics for one purpose or another, and all employ heat with great freedom.

(3) That infections of the skin and consequent later suppuration is more likely to occur than if Lister's methods are followed.

I will now describe one of Lister's operations in his last years at King's College. He did not require

a huge autoclave for sterilizing. He did not wear gloves, but he purified his own hands and the skin of the patient by a most potent antiseptic, which was called the strong mixture. It consisted of 1 to 20 carbolic acid in 1 to 500 corrosive sublimate. Lister, fortunately or unfortunately, had a very resisting skin; his hands, however, were usually rough, but he did not seem to mind. This was not the case with many of his followers, who could not, or would not, stand the discomfort strong lotions produced. This has undoubtedly been one cause of secession. The instruments and the sponges (he used marine sponges) had been long steeped in strong carbolic acid lotion, but during the operation they were wrung out of a very weak antiseptic solution. The towels placed round the field of operation were also carbolized. No irrigation was carried out. When the operation was complete, a dressing containing an antiseptic substance was applied.

His treatment of compound fractures was never modified after the first few years.

The differences you see are these:—

(1) Lister trusted to a potent chemical antiseptic, instead of to mechanical cleansing and heat, for sterilizing the skin, instruments, and the objects likely to be brought into contact with the wound.

(2) He applied a very weak antiseptic in small amount to the wound itself, instead of boiled water or normal saline solution.

(3) Instead of plain gauze, he used an antiseptic dressing, which has the great advantage of acting upon any organisms that, after the operation may reach the surface from the sweat and sebaceous glands of the patient.

These differences between the two systems, as thus stated, do not appear to be great, but they are important. "The little more, and how much it is! and the little less and how far away!" For in one there is simplicity and safety, in the other complication and risk. Thus in the first place sterilizing by a chemical antiseptic involves no special apparatus. It can be carried out in the humblest cottage. Secondly, the use of an antiseptic during the operation does away with the necessity of the surgeon and his assistants, young dressers, or busy country doctors, or nurses being constantly on the *qui vive* lest their simply aseptic garments should touch some unpurified thing and then convey defilement to the wound. Thirdly, security is provided for against secondary infection from the skin; or secondary infection through the dressing, if the discharges should soak through to the surface and thus supply a neutral track for the germs to travel along.

When I come to speak of results, I must necessarily be vague. I have, however, formed the opinion, from much observation and long experience, that the standard as regards suppuration amongst aseptic surgeons is lower than Lister's used to be. If a case "goes wrong," as the common but mischievous expression is, it is looked upon as an unavoidable accident, not as a disgrace. In recent years the terms, "stitch abscess," has sprung into use. Lister said he never had stitch abscesses. Forgive me for dwelling on them for a moment. The name is applied to suppurations occurring about stitches, and they arise in this way. Our skin is full of small glands for supplying greasy material to the hairs. Organisms are present in these glands, and any weakening of the tissues gives them a chance of doing mischief, the commonest illustration of which is the ordinary boil that starts from the fretting of a cuff or a collar. A tight stitch, or a not very tight one, may do the same. But the risk is very much diminished by thorough purification of the skin, which is much more effectually obtained by following Lister's instructions than by "aseptic" methods. It may be granted that stitch abscesses do not often lead to serious mischief, but they often cause troublesome suppuration in the wound itself, and involve delay, and the removal of important deep stitches, which were intended to be permanent. This risk is also lessened by using an antiseptic as opposed to an aseptic dressing. I confess I have never been able to understand the objection to an antiseptic gauze dressing. If the wound heals by first intention the antiseptic substance cannot possibly act upon the raw surface of the wound. Antiseptic gauze has all the advantages of sterilized gauze, except that it is slightly more expensive and has none of its disadvantages; in fact, I am confident that it has only been discarded on purely theoretical grounds.

To what extent, then, should we return? I would not urge the use of marine sponges, because they are difficult to clean and expensive, and because cotton swabs are equally efficient. Nor would I recommend the giving up of india-rubber gloves, although I know that they have their dangers, and although I know that they may safely be dispensed with by an antiseptic surgeon. Boiling instruments, I think, should be continued. Otherwise I say that it is only fair to students to tell them, and show them, that by carrying out Lister's technique, it is more easy to obtain the very best results and less likely to fail.

I have only spoken of civil practice, but I would not have ventured to offer you a surgical address, and I could not have hoped to attract your attention if it had had no bearing upon the war which is now raging.

Lister's faithful followers had not only watched with regret what they considered to be a retrograde step in civil practice, but they feared that a war would bring out in relief its weak points.

Wars have occurred of late in distant parts of the world, but we paid little heed to the details. It required a war in our midst, with our own flesh and blood in the trenches exposed to the bullets of the foe, and to the pestilence that walketh in darkness, to bring the matter really home to Englishmen. And when it came, the reports from the front of almost universal sepsis made us fear that our prognostication had come true, and that the abandonment of antiseptics was, at least in part, accountable. It appears, however, that antiseptics are being very largely used, though with most disappointing results.

The fact must not be overlooked that military surgery is exceptional, and that this particular war is being fought in most exceptional circumstances—trenches dug and monster shells exploding in the highly-cultivated soil of a noted tetanus area like the valley of the Aisne. It is almost impossible for us at home to appreciate what is going on. Listen, therefore, to this graphic extract from a letter I received last week from Sir Anthony Bowlby: "In this trench warfare you must remember that, if a man is hit, he often falls into filthy mud and water, which may be three feet deep or more. Remember also that the trench is only 2½ feet wide. If it is night, you can only grope about in the dark, and can do no dressing of any kind, for you can't even get any clothes off in the dark, and in so cramped a space, and you must try to get the man away to a 'dressing station,' half a mile distant, and thence to a field ambulance. If it is daylight, you can't get the man out of the trench at all, and he may have to be kept there for many hours, because he would certainly be killed if he was got out of the trench. And the water in the trenches is hopelessly polluted, and soaks his clothes and his wound. It is only too evident that large, lacerated wounds, and especially bad bone smashes, are so contaminated that it can never be possible to render them aseptic."

This is a dreadful picture; but all fighting is not trench fighting, and we might have hoped not to be told that all wounds, except bullet wounds, are septic, seeing that a few, at least, come under treatment within a reasonable period, say twelve hours, after infliction.

I have been helping Sir Watson Cheyne to lead a crusade in favour of applying to these dirt-infected wounds Lister's original method of purification by means of undiluted carbolic acid. Not that I advocate it for civil practice, but because I think that the only chance of destroying the organisms of tetanus and gas gangrene, and the best way of dealing with steptococci, is to use the most potent and safest antiseptic which is at the disposal of the surgeon for the purpose.

The suggestion met with the cordial approval of those who, like myself, have employed this agent extensively. But it excited a certain amount of loud criticism from others, who were chiefly impressed by the fact that undiluted carbolic acid produces a certain amount of sloughing. This criticism is easily met, because, if employed with the discretion that may be expected of reasonable people, the slough is unimportant, superficial, and antiseptic—incomparably less suited for the growth of micro-organisms than the extensive and spreading sloughs which they themselves produce. Moreover, these antiseptic sloughs do no harm, but are quickly absorbed if the wound heals antiseptically.

That is not the weak point in the argument. There is, however, another, more difficult to answer, of which our opponents did not make so much. Unfortunately, it cannot be denied that the spores of the bacilli of tetanus resist the action of even undiluted carbolic acid for a very considerable time. Moreover, my colleague, Dr. Thiele, has shown that, if easily recognizable micro-organisms are injected into the subcutaneous tissue, they enter the lymph channels, and may pass into the circulation in the course of a few minutes, long before there is a chance, if the same thing happens in contused wounds, of getting at them with our antiseptics.

Are we, then, to abandon this line of treatment, to fold our hands in despair and say that it is useless to attempt to disinfect any wound in civil or military practice to which spore-bearing or other organisms may have gained access? By no means. All Lister's work cries out against such a conclusion. We must clear our minds of the delusion that carefully planned experiments on guinea-pigs in the laboratory are on all fours with unrehearsed experiments in factories, or on wounded soldiers in the battlefield. Lister did undoubtedly succeed in stopping sepsis in compound fractures and in banishing tetanus and hospital gangrene from his wards, and the experience of generations of surgeons working with a saturated watery solution of carbolic acid has confirmed his conclusions. Surely, then, it may be possible to find a practical way of applying the principle to military practice.

It will not, however, do to brush the argument aside in this way without examining it and answering it. I therefore submit for your consideration a suggestion as to what happens in a case successfully treated antiseptically, that is, one that heals without suppuration.

We do not know for certain in what form the anærobic, spore-bearing organisms are introduced into a wound. I, at all events, do not know of scientifically conducted observations upon the subject. But it is clear that they must be either in the form of bacteria, or spores, or both, probably embedded in decaying organic matter in the soil. If the antiseptic reaches them it destroys the bacteria, together with the other septic organisms. But possibly, or, let us say, probably, it has not sufficient time before becoming too diluted to kill the spores, though it may for a while inhibit their power of development. There, then, these spores lie dormant between a thin layer of carbolized slough and a mass of more or less carbolized blood clot. If sepsis is avoided, the phagocytes at last invade both the slough and the clot, and healing takes place without suppuration. What is the fate of the spores?

We must suppose that, when the carbolic acid has disappeared, as they are embedded in a warm, airless nidus, they germinate, but only to find themselves surrounded by active phagocytes which, if they form a suitable pabulum, destroy them. And so the matter ends so far as the wound is concerned.

This, I maintain, is a reasonable hypothesis and a sufficient answer, and fortunately it is rare indeed, if it ever happens, for tetanus to occur after a wound has healed without any suppuration at all; and, moreover, the abolition of tetanus in civil practice has coincided with the reduction in the number of suppurating wounds.

As a further support of the argument, let us now consider the case of the bacteria and spores of

tetanus or gas gangrene lying together in an untreated wound, or in one to which less powerful antiseptics are applied, antiseptics not strong enough to destroy the pus-producing organisms. They find themselves, therefore, amongst extensive septic sloughs and decomposing blood-clots in which the phagocytes, if they can penetrate at all, have their time fully occupied with myriads of other organisms, which first weaken and then overpower them. Is it to be wondered at that lockjaw and gas gangrene affect a certain proportion of such cases? On the contrary, the marvel is that these complications are not more frequent.

For, after all, though tetanus and gas gangrene are ghastly things, and make a great impression because the laity knows about them, these diseases are not by any means the most deadly or the most frequent. Probably 40% of the wounds at one part of the campaign were infected with tetanus, but, up to date, there have been reported only 207 cases, of which only two have occurred since January 20. And it must be remembered that there are effectual ways of dealing with both diseases—tetanus by the prophylactic administration of antitetanic serum, and gas gangrene by very free incisions.

No, the deadliest enemy is the ubiquitous streptococcus, the foe that kills more than shells and bullets. But as it is certainly killed by undiluted carbolic acid or by a 5% solution in water, there is at least a chance that, so far as streptococci are concerned, wounds may be disinfected even in war, and if these and the other pyogenic organisms are destroyed, there is, as I have shown, great reason to suppose that sporing anærobes, like *Bacillus tetani*, would have no chance of growing.*

But it may be said: "What about the organisms that have entered the lymph channel and the blood current? What is the good of trying to purify the wound if they have already given us the slip?"

Let us see precisely what Dr. Thiele says, and remember that his experiments are conducted by injecting cultivations of micro-organisms subcutaneously. He maintains:—

(1) That they travel quickly to the nearest lymphatic glands, where they are retarded, perhaps killed.

(2) If not, they make their way along the thoracic duct to the jugular vein and enter the blood stream, and by that channel are conveyed, a few at a time, not in sufficient numbers to be detected by the microscope, to the bone marrow, the spleen, and other parts where groups of cells of the phagocyte class are ready to deal with them.

(3) If the enemy overpowers all these means of resistance, they may invade the blood in large numbers and cause general blood-poisoning.

(4) That some are quickly taken up by the blood without passing through the lymphatics.

I must again point out that, in spite of all these alarming facts, general septicæmia probably never occurs if the wound heals without suppuration. To take another simile from the war, the germs that escape into the circulation are like enemy aliens, prisoners of war, or the struggling Turks who crossed the Suez Canal. It is not they, but the main body on the fighting line—that is, the wound—who are engaged in manufacturing the deadly toxins. If they can be annihilated, there is not much fear of mischief from the enemy in our midst. It has never been suggested that germs which have entered the circulation from the wound go back with their ill-begotten progeny to make it suppurate. The argument, therefore, that it is useless to try to make wounds aseptic because some germs have already escaped into the circulation is no stronger than that founded on the resisting powers of spores to the action of antiseptics. Both are the arguments of the bacteriologist rather than of the practical surgeon, and, whilst being treated with all respect, they must not be estimated above their true value.

I cannot hope that your patience is not exhausted. But I trust that you are now convinced of the real danger that may result from neglecting Lister's teaching, both in civil and military practice.

As to the latter, which for the moment occupies almost all our thoughts, I should be the last to say that there is only one way of salvation—that, for example, corrosive sublimate is dangerous, or iodine untrustworthy, or peroxide of hydrogen of little value. Still less would I say that military and civil surgery should be run on the same lines. But I still think that undiluted carbolic acid is, according to our present lights, the antiseptic most likely to be practically useful in the rough-and-tumble practice of the battlefield.

And whether or not this may turn out to be the conclusion of our gallant brethren at the front, I would add that the experience of the present war is one of the strongest arguments for rallying to Sir James Crichton-Browne's battle-cry, "Back to Lister."

Long ago it was prophesied that science would stop war by making it too horrible. Are we nearing that blessed result? One fact stands out in spite of the faint hopes I have expressed—that nothing can stop sepsis in war except stopping war altogether.

* In using the word anærobe, I desire to own that I do not completely understand its meaning. It certainly has been used in more than one sense, and to-day bacteriologists are not agreed about the effect of oxygen on anærobes, their need for it, the sources from which they obtain it, and other points. We cannot divide micro-organisms by a clear cut line into ærobes and anærobes.

DUODENAL ULCER FROM THE SURGICAL STANDPOINT.[1]

By **Llewellyn Lambert, M.D., M.S.,**
Honorary Surgeon, Melbourne Hospital.

The advisability of surgical interference in duodenal ulcer must be considered when careful medication and dieting have failed to relieve symptoms, or when these symptoms have recurred after temporary relief. It is imperatively called for when an ulcer has perforated, when it is causing danger to life by repeated hæmorrhages, or when it is endangering nutrition by cicatricial obstruction. Our choice of operative procedure must be determined by the known ætiological and pathological conditions.

For many years it has been known that various toxæmias were associated with ulceration in the

[1] Read at a meeting of the Victorian Branch of the British Medical Association on June 2, 1915.

stomach and duodenum. The best known and first noticed instance was the duodenal ulceration and perforation following extensive burns of the body surface, but similar symptoms have been noted in other toxæmias, such as sepsis, cholæmia, etc. The determining factor localizing such ulceration to the stomach and duodenum is almost certainly the acid character of the gastric juice. Bolton's[1] experiments prove this most convincingly. By injecting an extract of guinea-pig's stomach into a rabbit, he produced in the rabbit's serum a substance which, on injection into guinea-pigs, caused necrosis and ulceration of the gastric mucosa. But this ulceration did not occur if the stomach contents were carefully and persistently kept alkaline. Then, again, the occurrence of jejunal ulcer after gastro-jejunostomy, and not after intestinal anastomosis, points to the acidity as the most important factor in the persistence of ulceration. The blood from the whole of the intestinal tract pours through the liver. If there should be intestinal stasis, abnormal putrefaction, or any septic focus such as chronic appendicitis, it is only reasonable to suppose that an excessive quantity of toxins will be excreted in the bile, and effect a continuous damage to the duodenal wall, possibly causing lesions analogous to the aphthous ulcers of the mouth. The vast majority of these probably heal promptly, but now and again, in certain individuals, the combination of infection and acidity is sufficient to determine the continuance of ulceration. Considerable light is thrown on the predilection of these ulcers for the upper and anterior wall of the first part of the duodenum by the anatomical researches of Wilkie[2], who, by careful injection experiments, found that the duodenal wall in many subjects was supplied by what is virtually an end-artery. In the majority of cases this arises from the gastro-duodenal artery by one or two slender branches running vertically downward, and having very little anastomosis with the blood supply of the rest of the duodenum. Mayo drew attention, long ago, to the fact that when the duodenum was drawn down, an anæmic spot appeared on the anterior wall near the pylorus, and this is precisely the area supplied by the supra-duodenal artery of Wilkie. We can readily understand how this relative limitation of blood supply would interfere with the healing of any lesion in this region, and also how it would increase the likelihood of perforation by sloughing once an ulcer has occurred.

The vast majority of these ulcers is surrounded by a large area of indurated, friable tissue, and therefore cannot be excised without encroaching seriously on the lumen of the bowel. As excision does not do away with hyperacidity, any direct treatment of the ulcer itself must be supplemented by some further procedure, such as gastro-jejunostomy, which not only prevents the passage of food over the ulcer area, but, by the free entrance of bile and pancreatic fluid through the stoma into the stomach, neutralizes the hyperacidity. The work of Sherrin,[3] Outland, Skinner, Clendinning[4] and others, confirmed by radioscopic examination of my own cases, proves that in the presence of an efficient gastro-jejunostomy opening, practically no food leaves the stomach by the pylorus, and there is, therefore, no need for pyloric exclusion or its occlusion by suture, fascial or omental strips, etc. Exclusion adds an unnecessary element of danger, while enough evidence has now accumulated to show that constricting sutures not noly cut through the bowel lumen rapidly, but that, after this has occurred, there is actually an over-dilatation of the pylorus. If the ulcer be small or, in healing has caused obstruction without much surrounding induration, Finney's gastro-duodenostomy would probably be the operation of choice. For ordinary cases, however, the procedure that appeals to me as causing the least risk and giving the best chance of cure is a combination of autolytic excision of the ulcer area by the pentagonal compression stitch of Draper and Carpenter[5] with a posterior gastro-jejunostomy. This compression method is specially indicated when the operation is undertaken for hæmorrhage, as many cases are on record where bleeding from the ulcer has proved fatal after gastro-jejunostomy has been performed. The most striking complication of duodenal ulcer is acute perforation. In the last two years I have operated in fourteen such cases. Analysis of the symptoms and signs presented by these patients shows that the first and most characteristic feature is the sudden onset of severe and overwhelming pain in the upper abdomen. The pain is continuous, burning in character, and not subject to remissions or exacerbations. Vomiting is not a marked feature; if present, it is usual only at the onset and is slight. At first, the temperature and pulse-rate are low, but in a few hours, the latter tends to rise. The patient is pale and looks very ill. He lies still in bed, and the respiratory movements are obviously restrained. On palpation, the abdominal muscles are found to be rigidly contracted, and I regard this rigidity as by far the most important factor in diagnosis. It is present from the onset, all over the abdomen, though, during the first few hours, careful examination will detect that it is slightly more marked on the right than on the left side. This is owing to the anatomical arrangement of the colon and mesentery directing fluid from the perforation toward the right iliac fossa. The presence of moveable dulness is hard to determine, on account of the muscular contraction, but, in any case, I regard it as a very unimportant sign compared to the rigidity. Similarly, with loss of liver dulness, on which so much stress has been laid by various writers. In five only of my fourteen cases was it noted to be diminished or absent in front, while, in all cases, it was present at the side. When it is remembered how often distension of the colon lessens liver dulness in front, it will be seen to be but a poor aid in the diagnosis of a perforated ulcer.

The chief conditions from which perforation has to be differentiated are acute pancreatitis, acute appendicitis, internal strangulation of bowel, and rupture of an ectopic pregnancy. Pancreatitis, as a rule, occurs in middle-aged alcoholics. The patient is often peculiarly cyanosed, vomiting is a more persistent feature than in perforation, and, above all, abdominal rigidity is not marked. Similarly, in

appendicitis, rigidity, if carefully tested, can always be found to be much more marked in the right iliac fossa than elsewhere, and, moreover, it never has the board-like quality so characteristic of perforation. In strangulation of bowel by a band, vomiting is persistent, pain is often paroxysmal, distension is present, and there is no rigidity. In ruptured ectopic pregnancy rigidity is absent, and the signs of internal hæmorrhage soon make the diagnosis clear. The treatment is laparotomy as soon as possible after perforation has occurred. Operation should never be delayed in the hope that patient may rally from the intial shock. Shock should always be combated by an immediate full dose of morphine. Of my fourteen cases, in only one was the ulcer suitable for excision, there being very little surrounding induration. In the others, the perforation was surrounded by a thickened, friable area, involving a large part of the duodenal wall. In these cases I endeavoured to obtain autolytic excision by a deep compression stitch, and covered in the groove thus formed by Lembert's suture, in some cases reinforced by a detached omental graft. Posterior gastro-jejunostomy by the no-loop method was then performed, the anastomosis being placed as near the pylorus and greater curvature as possible. Free fluid and lymph were gently swabbed up with sponges, special attention being paid to the right kidney fossa and the pelvis. The abdominal wound was closed in layers without drainage. I have not had occasion to re-open any of these cases for secondary abscesses. Of the fourteen patients, three died. One was so nearly moribund on admission that the operation was performed under local anæsthesia with novocaine. The other two deaths, curiously enough, were of men each aged 29, who had been drinking heavily, and who developed acute delirium tremens within a few hours of operation. Both got out of bed, and finally had to be strapped down. Both died of heart failure, with no sign of any progressing abdominal lesion. One of the patients lived 48 hours; a post-mortem examination showed the infolded ulcer and anastomosis to be perfectly sound, and there was no free fluid in the peritoneal cavity.

Cases.

1. M., 55. No previous history of dyspepsia. Rigidity marked. Liver dulness normal. Vomiting absent. Result: complete recovery.

2. M., 29, heavy drinker. Slight pain and fulness after meals for some weeks. No melæna. Rigidity marked. Liver dulness normal. Vomiting frequent. Result: developed acute delirium tremens and died.

3. M., 52. Gnawing pains after food for over a month. Pain often awakened him at night, and was usually relieved by food. No melæna. Rigidity marked. Liver dulness normal. Vomiting absent. Result: complete recovery.

4. M., 64. For months has had pain coming on a half to two hours after food. Worse last three weeks. No melæna. Rigidity marked. Liver dulness normal. Vomiting absent. Result: moribund on admission; died.

5. M., 27. Pain after meals for the last three months. Starts half hour after meals Always better before the next meal. Not relieved by food. No melæna. Rigidity marked. Liver dulness normal. Vomiting absent. Result: complete recovery.

6. M., 45. Pain two to three hours after each meal. Always relieved by food. No melæna. Rigidity marked. Liver dulness diminished in front, present at the side. Vomiting absent. Result: complete recovery.

7. M., 31. Indefinite discomfort after meals. No melæna. Appendix markedly diseased and removed. Rigidity marked. Liver dulness normal. Vomiting absent. Result: complete recovery.

8. F., 30. Indefinite history of dyspepsia. No melæna. Perforation on stomach side of pylorus, near lesser curvature. Rigidity marked. Liver dulness absent in front, present at side. Vomiting absent. Result: complete recovery.

9. M., 22. Pain and fulness after meals for months, not relieved by food. No melæna. Rigidity marked. Liver dulness normal. Vomited several times. Result: complete recovery.

10. F., 42. Pain and flatulence for years, starting half-an-hour after food. Has often vomited dark brown fluid. Last week vomited bright blood. Has had black stools. Rigidity marked. Liver dulness absent in front, present at the side. Vomited once. Result: complete recovery.

11. F., 42. Bilious attacks for years at irregular intervals. Not much pain, but a feeling of fulness and discomfort after meals. Three months ago vomited bright blood and passed black stools. Appendix found acutely inflamed and removed. Rigidity marked. Liver dulness absent in front, absent at the side. Vomiting absent. Result: complete recovery.

12. M., 29, heavy drinker. For weeks has had pain in upper abdomen, worse at night. No definite relation to food. No vomiting or melæna. Rigidity marked. Liver dulness absent in front, present at the side. Vomited several times. Result: developed acute delirium tremens and died.

13. M., 41. For years has had great discomfort in the upper abdomen, bearing no relation to food. No melæna. Rigidity marked. Liver dulness normal. Vomiting absent. Result: complete recovery.

14. F., 39. Pain and discomfort for years, coming on two hours after food. Pain relieved by vomiting and by alkalies, but not by taking more food. Three bad attacks in last ten months. No melæna. Rigidity marked. Liver dulness normal. Vomiting slight. Result: complete recovery.

REFERENCES.

1 *Lancet*, May 9, 1908.
2 *Surg., Gynaec. and Obstet.*, October, 1911.
3 *Surg., Gynaec. and Obstet.*, November, 1914.
4 *Surg., Gynaec. and Obstet.*, August, 1913.
5 *Surg., Gynaec. and Obstet.*, June, 1912.

———o———

DUODENAL ULCER.

By **A. V. M. Anderson, M.D.,**
Honorary Physician, Alfred Hospital.

In considering duodenal ulcer, the first difficulty we encounter is in the diagnosis of duodenal from gastric ulcer, and this difficulty is marked in acute

as in chronic forms of the disease. Even such an authority as Ewald says that in at least 90% of cases it is impossible to decide positively which we are dealing with. Mayo states that in operating, the relation of the ulcer to the pyloric vein is the deciding point. It must be remembered also that in many cases ulcers are present both in the stomach and duodenum. It is interesting to recall views held a few years ago with regard to the frequency of ulceration in the two positions. At one time gastric ulcer was supposed to be much more common than duodenal ulcer. Mainly as a result of experience gained by surgical intervention, it is now known that duodenal ulcer is much the commoner of the two conditions. Mayo's figures may be quoted here:—

In 621 cases there were 401 duodenal and 201 gastric ulcers, and in 19 instances, ulceration occurred in both positions. Again, the greater prevalence of ulceration in males than in females must be remembered, the figures being 74½% males and 25½% females. One of the reasons why, up till quite recently, duodenal conditions were supposed to be less frequent, was that these cases were regarded as simple dyspepsia.

The frequency of ulceration is a matter which has given rise to much discussion. Recent figures show that in the United States and Canada, ulceration in the stomach or duodenum occurs in 1.32% of cases subjected to post-mortem examination. On the Continent the percentage is 5, and in London 4.2. No age is exempt from the condition; even simple ulceration is not uncommon in the aged and in children. Schmidt states that there were 20 cases of duodenal ulcer in 1,109 post-mortem examinations of children under one year. It seems to me probable that the so-called cyclic vomiting in children may sometimes be an incident in duodenal ulcer. Our tendency nowadays is to regard most dyspepsias as secondary to organic disease of the abdomen. We have to remember that abdominal symptoms are seen in tabetics and in cases of abdominal aneurysm, and may be regarded as dyspeptic. Again, in many general diseases, dyspeptic symptoms are not uncommon, for example, in such conditions as chronic nephritis, phthisis and pernicious anæmia. But excluding such conditions, and those which are the result of improper feeding, our general tendency in dyspeptic conditions is to search for an organic cause.

As regards the differential diagnosis between gastric and duodenal ulcers, hæmatemesis is much more likely to be found in cases of gastric ulceration. In duodenal ulceration, on the other hand, the presence of occult blood in the fæces without hæmatemesis is significant. Two diagnostic points have been given in making a diagnosis. (1) If a long interval occurs between the taking of food and the occurrence of pain, the disease is more likely to be duodenal. (2) Duodenal ulcer is suspected if the pain and tenderness are situated on the right of the mid-line. As regards the first, although the interval mentioned is likely to be of importance in determining the position of the ulcer, this is not always so. As soon as food enters the stomach, peristalsis begins, and spreads quickly throughout the intestinal canal, and if adhesions be present at any part of the intestinal tract, pain may occur very shortly after food has been taken. Thus, I have seen pain immediately following the taking of food in a case which had been operated on for appendical abscess, and where there were dense adhesions in the right iliac fossa. After operation and separation of adhesions, the pain soon disappeared. Again, pain in stomach or duodenal ulcerations is frequently associated with hypersecretion, and thus is likely to occur towards the end of digestion. Further, there is no doubt that pain and tenderness on deep pressure are likely to occur rather to the right of the mid-line in duodenal ulcer, but the statement of McKenzie as to the seat of pain must be remembered. He stated that the nearer the ulceration was to the cardiac end of the stomach, the higher in the epigastric region were pain and superficial tenderness to be found, while duodenal conditions gave rise to pain low down in the epigastric region.

Many theories have been held as to the causation of duodenal ulcer. In our student days one of the principal causes was supposed to be the presence of burns on any part of the body, and especially at a time when these burns were in the sloughing stage.

It is believed now that such ulceration is secondary to hæmorrhagic erosions, which may occur in many other places in the intestinal canal, and are usually due to sepsis. This condition of sepsis in the causation of duodenal ulcer has assumed considerable importance, and especially in connexion with dental sepsis, which applies more to gastric ulceration; and secondly, there can be no doubt as to the frequent association of gastric and duodenal ulcers with appendicitis. Paterson found appendicitis to be present in 66% of all cases of duodenal ulcers operated on, and Smithies found that the appendix was diseased in 35 out of 50 cases of gastric ulcer. That this close connexion occurs between the two conditions must be the experience of everyone who is conversant with abdominal diseases.

It is interesting also to note that there is a close connexion between appendical troubles and gall bladder diseases, on the one hand, and ulcer, as has been shown by investigations of the Mayos at their hospital.

The connexion of chlorosis with ulceration, especially gastric, has been regarded as intimate. It has seemed to me of late years that although chlorosis is much more uncommon than it used to be, gastric ulceration is much more common, and it would seem that frequently the ulceration condition may be primary, and the anæmic condition secondary. This, however, is not always so. Again, the pressure of corsets in woman has been supposed to be a frequent source of ulceration; probably this cause is less seriously regarded now that we know of the more frequent occurrence of ulceration in men.

The question of the rôle of starchy and saccharine food in the causation of duodenal ulcer opens up a field for investigation.

Symptoms.

Acute ulcers are very frequently latent, and their presence may be first manifested by mild dyspeptic

symptoms or by a sudden severe hæmatemsis, or by perforation. Sometimes, however, epigastric pain and frequent vomiting, with little or no bleeding, may suggest the presence of disease. Everyone must be acquainted with tragical occurrences in the way of sudden perforation or hæmorrhage, where it has been very difficult to procure any antecedent history pointing to the existence of disease.

In chronic cases, on the other hand, the history is usually one of long-standing dyspepsia, with pain and sometimes vomiting. In chronic duodenal ulcers, as has been already stated, the presence of occult blood may be helpful in diagnosing the disease. In cases where obstruction has occurred at the pylorus or in the duodenum, the symptoms of dilatation of the stomach may be of importance. As a rule, however, it may be said that the main symptoms of chronic duodenal ulcers are those of hyperchlorhydria or rather hypersecretion. There is pain coming on some time after food, and relieved by taking more food or drink or alkalies. There is often associated with this, tenderness in the epigastrium or to the right of the mid-line. Hunger pain, occurring especially at night, has been regarded by Moynihan and Mayo as pathognomonic; wasting and constipation are frequent symptoms. But whether such symptoms as these are indicative always of duodenal ulcers is a little open to doubt. Moynihan appears lately to have modified his views as to the exact significance of hunger pain; it may, at any rate, be said that these symptoms are practically proof of stomach hypersecretion. Fenwick's figures as to the causes of hypersecretion are interesting. In 112 cases of hypersecretion under his care which were operated upon, there was chronic ulcer of the stomach in 13 cases, chronic ulcer of the duodenum in 46 cases, duodenal ulcers with other conditions in 10, gall-stones and appendicitis in 34 cases, gastric ulcers and appendical troubles in 5 cases, and pyloric cancer in 4 cases. It is interesting to contrast with this, figures given by Pilcher in the St. Mary's Hospital reports. Pilcher has drawn particular attention to a condition occurring in non-malignant abdominal cases, in which there is chronic gastritis, associated with hypochlorhydria or achlorhydria and occult blood in the fæces. All these cases were operated upon, and in none was any malignancy found. In 36 cases there was appendicitis, in 32 gall-bladder disease, in 16 gall-bladder and pancreatic disease, and in 16 stomach disease, pyloric spasm was associated with appendicitis in 18 cases, and with gall-stones in 6 cases. The association of similar pathological conditions, with either excess or deficiency of the gastric secretion, is extremely interesting, and shows us the impossibility of diagnosis by any such method as examination of stomach contents only.

The conclusion that seems to be inevitable is that in cases where hypersecretion is present, one must always be suspicious of the presence of abdominal organic disease. What this disease is has to be determined by other symptoms, but that the preceding condition is always duodenal ulcer does not seem to be probable. Fenwick's opinion is that "Chronic hypersecretion is not a disease, but merely an expression of an organic lesion of some part of the digestive tract, or of those organs which pour their secretion into it." The natural conclusion is that if we find a condition of excessive acidity or of hypersecretion on examination of the stomach contents, it is necessary to make further investigations before being definite as to the condition which causes the symptoms. As symptoms of duodenal ulcer may be mentioned, occasional attacks of subacute pain in the pyloric region, associated with tenderness, slight rise of temperature and leucocytosis. In these cases there is often local peritonitis, which subsides in a few days. It is important that all such conditions should be carefully investigated.

Prognosis.

As to the prognosis in duodenal ulcers, I need say very little as regards acute cases. Here the incidence of hæmorrhage or of perforation is of extreme importance. Perforation of duodenal ulcers is apt to be less dangerous than that of ulcers of the stomach, because the pylorus on the occurrence of perforation is said to contract sharply and firmly, and thus prevent the escape of stomach contents.

Dr. Lambert has already referred to perforation. As to prognosis in hæmorrhage, very varied views are held. Ewald, for example, has very rarely seen death result from hæmorrhage; on the other hand, Fenwick states that 17% of deaths from ulcer are due to hæmorrhage. There is no doubt that very severe hæmorrhage may be recovered from, and I am rather adverse to the operative treatment of severe hæmorrhage, although I think it is much more likely to be of service in the sub-acute, recurrent cases of hæmorrhage.

Malignancy is much more rare in duodenal than in gastric ulcer. There is no doubt as to the chronicity of duodenal ulcer. I had under my care recently a man whose symptoms have lasted for nearly 40 years. He now gets small intestinal hæmorrhages occasionally, with slight inflammatory attacks in the upper abdomen. A very distinct tumour, which is evidently a chronically enlarged pylorus, can be felt in the upper abdomen. There is no doubt also as to the tendency of duodenal ulceration to recur. It might perhaps be more correct to say that the symptoms recur. It is very probable that a symptomatic cure rather than an anatomical cure of duodenal ulcer is the rule. Mayo says that in operating on cases where there has been duodenal ulcer which has been supposed to be cured he finds actual ulceration almost uniformly present.

On the day on which I originally compiled these notes, I saw in succession three patients with symptoms of recurrent duodenal ulcer, the period since the last symptoms being respectively, six years, two years, and four months.

Treatment.

Acute ulcers heal well. Bolton says that once they begin to heal, hyperacidity has no effect on the healing process. The main principles of treatment are:—

(1) To keep the stomach contracted.
(2) To prevent stomach movements.

(3) To keep the digestive glands in the resting condition.

The majority of us, especially since Dr. Wilkinson's exposition of the Lenhartz diet, with alkalinization of the stomach contents, must have seen excellent results following on this treatment, and in many cases there is certainly a symptomatic cure. In chronic ulcers there seems to be much less certainty as to the probability of an anatomical cure. Still, there is no doubt that some patients remain well for many years, and it is a not uncommon experience in making a post-mortem examination to see scars of healed ulcers. Even when apparent recurrence takes place, it is not certain that this has taken place on the site of the original ulcer. The methods of treatment of chronic gastric ulcer are much the same as in acute ulcer. The Lenhartz diet with alkalinization is certainly of the greatest service. Any condition interfering with the general health must, of course, be rectified. It is hardly necessary to mention scrupulous care in regard to the teeth, the cure of chlorosis if present, and the rectification of any septic condition in any part of the body. If any conditions such as appendicitis or gall-stone trouble exist, its cure, usually by surgical means, must be attempted. As regards drugs in the treatment of duodenal ulcers, I may mention atropine, which seems to be particularly valuable in preventing the occurrence of intestinal spasm. Dr. Hort has laid much stress on the administration of normal antilytic serum, which he gives in cases of 10 c.cm. 3 or 4 times daily. I am in the habit of using bynoplasm in the same way. Cohnheim urges the use of moderate doses of olive oil for combating hyperchlorhydria. He says he has never been obliged to have an operation performed in a case of simple ulcer. In spite of all our methods of treatment, some physicians are rather pessimistic concerning the probability of the medical cure of a chronic hypersecretion. Fenwick says, "I am obliged to confess that out of nearly a thousand cases that have come under my care, I can hardly recall an instance in which a cure can be said to have been effected without recourse to an operation." There cannot be much difference of opinion as to the advisability of operation in two conditions. First of all, in perforation which requires surgical treatment, even in cases where the diagnosis is probable but may not be absolutely certain. In cases of chronic obstruction at the pylorus or duodenum, with evidence of gastric dilatation, surgical intervention and gastro-enterostomy are called for. There is some doubt as to the advisability of operation in repeated hæmorrhages; but the general opinion is that such a condition requires operation. At the same time, it must be borne in mind that it is not always easy to make certain of the site of the hæmorrhage. Within the past fortnight I have seen a case of hæmatemesis which proved fatal, and in which the source of hæmorrhage could not be found on post-mortem examination, and such cases are not unusual. The question as to the actual operation to be performed is one for the surgeon to determine. There is, or has been recently, a tendency to regard chronic duodenal ulcer as curable only by surgical means. Mayo humourously says that his opinion used to be that operation should be performed after nine complete and permanent medical cures.

Gastro-enterostomy is said to be a very successful operation. Mayo's mortality is 2.4%, and Moynihan's is 3.5%, while in operation for chronic ulcer, Moynihan had two deaths in 216 cases; of those who recovered, 196 were said to be cured, 8 improved, and 12 were no better. It must be remembered, however, that all surgeons are not Mayos, or Moynihans, and other authors have given other results for this operation. In the *Medical Annual* of 1912, Dunham gives the result of 48 cases: 12 of the patients died within 17 days of the operation, one from intercurrent appendicitis, one from perforation and peritonitis, one from peritonitis, two from hæmatemesis, five from shock, and two from vicious circle. Again, in the *British Medical Journal* (March 1, 1913), Dr. Bourne, late House Surgeon of St. Mary's, gives the result of 92 cases of gastro-enterostomy for ulcer. Seven died after the operation, while of the end results in 24 cases of gastric ulcer, the results were excellent or good in 38%, and were fair or bad in 62%. In 37 duodenal cases, on the other hand, the results were excellent or good in 70%, and fair or bad in 30%. Dr. F. J. Smith, in the *British Medical Journal*, of March 19, 1910, says, that of 314 cases treated by operation, and omitting perforated cases, 55 died and 28 relapsed. One would like to know also whether all of these patients who have been subjected to operation are actually cured, or is there a symptomatic and not an anatomical cure. It must be within the experience of many physicians, in hospitals particularly, that symptoms are not altogether ended by gastro-enterostomy. Some of those patients who have been operated on are frequent inmates of hospitals long after their operation, with the original symptoms much as they were before operation. Even after resection of the ulcer, a permanent cure does not always result. Moynihan, in the *Medical Annual*, 1913, quotes Dobson (*British Medical Journal*, 1912, II., p. 864). He states that of 14 cases in which a gastric ulcer was resected without gastro-enterostomy, there were four recurrences within twelve months of operation.

Finally, we may say that gastro-enterostomy is not to be regarded as the complete and final means of cure. As Dr. Bourne says, "It is no more than an excellent way of helping a stomach to cure itself."

Naval and Military News.

The following notices have appeared in the Commonwealth *Gazette* No. 61, dated June 26, 1915:—

Appointments.

His Excellency the Governor-General, acting with the advice of the Federal Executive Council, has been pleased to approve of the following changes, etc., in connexion with the Military Forces of the Commonwealth, *viz.*:—

1st Military District.

A.A.M.C.—

The provisional appointments of Captains G. A. C. Douglas, C. A. Thelander, L. P. Winterbotham and E. Culpin are confirmed.

A.A.M.C. Reserve—

Arthur Charles Ward and Benjamin Gilmore Wilson to be Honorary Captains.

2nd Military District.

A.A.M.C.—

Lieutenant-Colonel A. E. Perkins, D.S.O., to be Principal Medical Officer (temporarily), with pay, consolidated, at rate of £500 per annum, *vice* Colonel T. H. Fiaschi, D.S.O., V.D.

Benjamin Digby Gibson to be Captain (provisionally and temporarily).

Second Lieutenant R. B. North is transferred from Sydney University Scouts, and to be Captain (provisionally and temporarily).

A.A.M.C. Reserve—

Gilbert Elliot Aitken to be Honorary Captain.

Lieutenant J. H. Bradley is transferred from Australian Volunteer Automobile Corps, and to be Honorary Lieutenant.

3rd Military District.

A.A.M.C.—

Robert Fulton Craig and Wade Shenton Garnett to be Captains (provisionally and temporarily).

A.A.M.C. Reserve—

Honorary Captain F. B. Crawford is transferred to Australian Army Medical Corps, and to be Captain (provisionally and temporarily).

4th Military District.

A.A.M.C.—

Captain E. A. Johnson is transferred to the Unattached List.

A.A.M.C. Reserve—

Arthur Evan Williams and Rupert Eric Magarey to be Honorary Captains.

5th Military District.

A.A.M.C. Reserve—

William John Beveridge to be Honorary Captain.

6th Military District.

A.A.M.C. Reserve—

Charles Alexander Payne to be Honorary Captain.

Appointments.

To be Colonels—

Colonel T. H. Fiaschi, D.S.O., V.D., A.A.M.C.

Honorary Major Sir A. MacCormick, A.A.M.C. Reserve, supernumerary, with pay of Lieutenant-Colonel.

To be Lieutenant-Colonels—

Major J. A. Dick, A.A.M.C.

Major C. T. C. de Crespigny, A.A.M.C.

Richard Rawdon Stawell.

Sydney Jamieson.

Arthur Murray Cudmore.

To be Majors—

Captain J. A. H. Sherwin, A.A.M.C.

Captain W. G. D. Upjohn, A.A.M.C.

Honorary Major J. L. Gibson, A.A.M.C. Reserve.

Honorary Major H. R. Maclean, A.A.M.C. Reserve.

William Trethowan.

John Morton.

Clarence Read.

Wilfred Kent Hughes.

Herschel Harris.

Herbert Jamieson Stewart, supernumerary, with pay of Captain.

Henry Croker Garde.

To be Captains—

Captain G. A. W. J. Knight, A.A.M.C.

Captain K. Smith, A.A.M.C.

Captain J. J. Hollywood, A.A.M.C.

Captain R. A. P. Waugh, A.A.M.C.

Captain W. T. Newton, A.A.M.C.

Captain A. P. Wall, A.A.M.C.

Captain A. M. Wilson, A.A.M.C.

Captain C. Yeatman, A.A.M.C.

Captain E. A. H. Russell, A.A.M.C.

Captain (temporary) W. F. Matthews, A.A.M.C.

Captain (temporary) F. D. H. B. Lawton, A.A.M.C.

Honorary Captain R. E. Shuter, A.A.M.C. Reserve.

Honorary Captain W. de W. Henty, A.A.M.C. Reserve.

Honorary Captain J. Hardie, A.A.M.C. Reserve.

Honorary Captain H. F. Alsop, A.A.M.C. Reserve.

Arthur Horace Gibson.

Thomas Lynewolde Anderson.

Eric Mortley Fisher.

Alfred Fay Maclure.

Roger St. Clair Steuart.

Andrew Joseph Brennan.

Lancelot Alfred Hayward.

Leonard Roy Cook.

Reginald Eustace McClelland.

Edgar Horatio Milner Stephen.

Archibald Jamieson Dunn.

Charles Reginald Palmer.

Edward Wilkinson Deane.

Thomas Garnet Stirling Leary.

Robert Wiseman Cunningham.

James Edward Fancourt McDonald.

Arthur Anderson.

James Arthur Murphy.

Robert Edward Dunn.

Stanley Jacob Cantor.

Harold Oscar Teague.

Percival Arthur Clive Davenport.

Francis Audubon Gray.

Ainslie Stalham Clowes.

To be Lieutenant—

Honorary Lieutenant J. R. Hill, A.A.M.C. Reserve.

To be Captain and Quartermaster—

Captain W. C. Medlyn, Reserve of Officers.

To be Quartermaster and Honorary Lieutenant—

Second Lieutenant A. P. Anderson-Stuart, A.A.M.C.

The following have been appointed to the Hospital Ship No. 1: Major Wood, Captains Robinson, Johnston and Renwick.

Hospital Ship No. 2: Captains Robertson, Bell, Cade and Foster.

Convalescent Depôt: Major Buller Allen, Captains Jamieson, Mackay and Yule.

Colonel W. L'Estrange Eames, C.B., of Newcastle, has been mentioned in the despatches on June 24, 1915, for gallant conduct.

Colonel N. R. Howse, V.C., of Orange, has also been mentioned.

The following members of the R.A.M.C. have been killed: Major W. M. Mackay, attached to the 6th Batt. Durham Light Infantry (T.F.); Major F. G. Proudfoot, attached to the Oxfordshire Yeomanry (T.F.), and Lieutenant E. Stratford.

The following have been reported wounded: Lieutenant G. L. K. Finlay; Lieutenant J. A. MacMahon, attached to the 1st Batt. Somerset Light Infantry; Captain C. D. Weir; Lieutenant D. H. Wardle, attached to the 2nd Northumbrian Field Ambulance (T.F.), and Lieutenant H. S. De Boer.

Lieutenant J. A. Stenhouse is reported missing.

Captain C. A. Wood, I.M.S., attached to the 1st Batt. 4th Gurkha Rifles is reported wounded.

Captain J. L. Duval and Captain R. H. McGibbon, both of the 1st Canadian Field Ambulance, are reported wounded.

Fleet Surgeon Adrien A. Forrester, M.B., R.N., is reported killed.

Captain C. Shellshear, of Sydney, is reported to have been wounded during the fighting on the Gallipoli Peninsula.

———o———

TOBACCO FUND.

One of our members has sent us two shillings "for Tommy Cornstalk's Tobacco Fund, wishing him good luck and good fortune." As will be seen from the appended list, the subscriptions during the past week have been fairly numerous. We would wish, however, that more members of the Association would send in a shilling or two for "Tommy's Smokes."

Amount previously received, £24 6s.; Anonymous, 10s.; Anonymous, 2s.; Dr. T. W. Brown, Melbourne, 1s.; Mrs. Brown, Melbourne, 1s.; Miss G. O. Carroll, Sydney, 5s.; Miss E. Chauncy, Sydney, 5s.; Miss H. Chauncy, 5s.; Dr. A. Clayton, S. Aust., 5s.; Mrs. Clayton, 5s.; Dr. M. C. Davies, Vic., 5s.; Dr. C. Franceschi, N.S.W., 10s.; Dr. H. F. Hayes, Vic., 5s.; Dr. E. J. Jenkins, 2s.; Mr. James Little, Melb., 2s.; Dr. Wilton Love, Bris., 10s.; Dr. W. McMurray, Sydney, 10s.; Dr. F. J. Owen, Vic., 5s.; Miss A. J. Panten, Melb., 1s.; Dr. R. H. Todd, Sydney, 10s.; Dr. W. G. H. Tregear, Vic., 5s.; Total, £29 10s.

The Medical Journal of Australia.

Anniversary.

"Be to our faults a little blind, and to our virtues ever kind!" On July 4, *The Medical Journal of Australia* enters on its second year. The first year has been fraught with difficulties, which would certainly have wrecked it but for the whole-hearted support of the medical profession in Australia. In normal times, many workers in science and practice contribute to the success of a medical journal, which is the official organ of the representative medical association of the country. Under the circumstances of the war, many able men have been compelled to defer rendering this assistance to the *Journal*. We trust that the collaboration of these willing co-workers will be renewed at no distant date. One has been taken from us. The late Dr. Mathison, whose untimely death was recorded in these pages a few weeks ago, was a man we can ill spare.

Critics have not been idle during the first year of the life of the *Journal*. Much of the criticism has been open, friendly and helpful, and we have endeavoured to improve the *Journal* in the light of the suggestions thrown out.

From a commercial point of view, the Managers have every reason to be satisfied that, despite the effects of the war on trade, the *Journal* is making headway. The future in this connexion is a promising one.

The object of the *Journal* is to serve the members of the British Medical Association in the Commonwealth. With their full support and assistance, this object will be attained. Without it, *The Medical Journal of Australia* must fail as the official organ of the Association. We rely on the forebearance and help of our members.

Vivat, crescat, floreat!

—o—

THE ORGANIZATION OF THE MEDICAL PROFESSION FOR MILITARY SERVICE.

The deliberations of the members of the Federal Committee on the best means of conserving the strength of the medical profession and of utilizing as much as possible of its knowledge and skill in the service of Empire has been of a careful and thorough nature. We do not propose to approach the decisions arrived at in a hypercritical or cavilling spirit, but use this opportunity of calling on the patriotic feeling of the medical practitioners throughout the Commonwealth to strain every nerve to perform an important duty for the safety of our great nation. It must be remembered that the Federal Committee has consulted with the Director-General of Medical Forces, a man of undoubted ability and sound judgement, and with the Principal Medical Officers of the six Australian Military Districts. We have expressed the opinion that the proposal of the New South Wales Branch of the British Medical Association to form a voluntary medical service for the care of the wounded men returning to this country had much in its favour and but little to its disadvantage. The need for subjecting the practitioners undertaking the medical attendance on the brave men from the Gallipoli Peninsula to military discipline did not appear to us to be great, and the alternative of organizing special military hospitals and making special arrangements with private practitioners seemed to us to entail much unnecessary waste of activity. On the other hand, there appears to be no doubt in the minds of the representatives of the military authority that the voluntary scheme cannot be accepted, because the authority has to accept the responsibility, and can only do this if it retains full control.

Medical practitioners will be asked within a short time whether they are prepared to accept service in some way or another, and the enquiries of the Branches of the British Medical Association will serve as a basis on which the full activity of the profession can be utilized to its best advantage. That the British Medical Association is to be utilized for the purpose of meeting the requirements of the military authority is in itself a highly satisfactory sign.

Members will do well to take note that there is a great shortage of doctors, and that men can serve their country by joining the forces on active service abroad, by joining the garrisons and military hospitals at home, or by taking part in the care of the convalescent soldiers after their discharge from hospital. In addition, useful work can be accomplished by undertaking the private and hospital

work of others, in order that these men may take on duty with the military forces.

Not every man is able or fit to join the forces. All can help. We appeal to all our members to do what they can for their King and country.

———o———

BACK TO LISTER.

We have been induced to reprint in this issue a remarkably powerful lecture, delivered by Sir Rickman Godlee, entitled "Back to Lister." We do this, because the original text may not be accessable to many of our readers. The thesis expounded is one which thoughtful men have felt for many years to be sound, even if few have formulated it in words. The sharp distinction between aseptic and antiseptic surgery has led to confusion, and this has given those irresponsible persons who have attempted to belittle the monumental work of Lister an opportunity of essaying to discredit all scientific work. The truth is that aseptic surgery is quite impossible, and, as Sir Rickman so ably demonstrates, antisepsis is as much a necessity to-day as it was when Joseph Lister first reformed operative work. The lecture is peculiarly appropriate at the present time, when suppuration, gangrene and tetanus are met with in the grimy field of battle. The words of the President of the Royal College of Surgeons of England are important and of educational value. For this reason, we give the practitioners in Australia an opportunity of studying them carefully.

———o———

THE SALE OF HYPNOTICS IN VICTORIA.

Our attention has been called by the Pharmacy Board of Victoria to the regulation of the Board in regard to the sale of hypnotic and narcotic drugs. This regulation provides that no pharmacist may supply any person with morphine, cocaine, chloral hydrate, veronal, sulphonal or similar hypnotic or narcotic drugs, whether for hypodermic or other forms of medication, save on the written order of a registered medical practitioner. We understand that nurses are under the impression that they are exempted from the effect of this regulation. This is not the case. No person other than a registered medical practitioner will in future be able to obtain these drugs unless he has a prescription from a doctor. The action is a very commendable one, and while directed primarily against the criminal use of these poisons, will not fail to have some effect on self-medication. We would welcome an extension of the regulation to all drugs used in the treatment of disease.

PRESENTATION OF THE TALGAI SKULL TO THE UNIVERSITY OF SYDNEY.

The Chancellor (Sir William Cullen, C.J.) presided over a meeting held in the Geological Theatre at the University of Sydney on Friday evening, June 18, 1915, to receive the Talgai skull presented by the Hon. Mr. J. Joynton Smith, M.L.C. A large audience, comprising members of the University and of the leading scientific societies, filled the theatre. A fine series of casts of famous skulls was exhibited on the lecture table, and a set of lantern slides illustrated the lecturettes on the geological age and anthropological characters of the skull.

Professor T. W. Edgeworth David, C.M.G., delivered an address on the means for computing the antiquity of the skull. The skull had been found 31 years ago in Dalrymple Creek, at Talgai Station, in Southern Queensland. The soil at this spot showed a superficial layer of "black" soil, covering a deposit of "red" soil. Remains of extinct animals were abundant in the ochreous formation. Mr. Wm. Nash had found the skull after a flood, almost at the bottom of a washaway. A high antiquity could be argued from the state of mineralization. Fossilization from the deposition of lime occurred along the line of junction of the "black" and "red" soils. This was the first fossil skull discovered in Australia. It was found along with the fossil remains of the extinct marsupial elephant, marsupial lion and the giant lizard, *Megalania*. From its mineralized state and its occurrence in a particular layer, the Talgai skull was considered of sufficient age to be grouped with the Würm (Swiss Alpine) Ice Age. Baron de Geer had been able to compute the length of time in years for the interglacial period between the Würm and Riss glacial epochs. Between Lake Ragunda and the Baltic Sea, in Sweden, a series of layers of mud had been found, lying one above the other, like the leaves of a book. Each layer represented the deposit of mud from the ice of the receding glacier melted during each summer. By counting the number of these deposits, it had been calculated that 17,000 years had elapsed from the acme of the Würm Ice Age to the present day. The skull could truly be regarded as that of a man living in Pleistocene times. It was the first human remain of high geological antiquity to be found in Australia. The presence of man explained how the remains of the dingo were found in Australia in fossil beds. Professor David concluded his remarks by expressing his warm appreciation of the generosity of Mr. Joynton Smith in purchasing this valuable skull and presenting it to the University. It had thus been possible for Australian scientists to publish the first account of its peculiarities.

Professor S. A. Smith lectured on the anatomical features of the skull and its affinities to the skulls of primitive peoples. He stated that Professor J. T. Wilson had commenced the examination of the skull. When Professor Wilson had found that his military duties would prevent him continuing his study of the skull for an indefinite period, he had, with great generosity, handed the skull to the lecturer for description. Professor Smith was sure that every physical antropologist had dreamed of handling a Pleistocene Australian skull. When the inevitable controversy on the human and simian characters of this skull was ended, the "Talgai" man would emerge as one of the earliest of primitive men. The fossil skull had been split along the middle line and freed from its incrustation of lime. It had been subjected to great pressure in the earth, so that it had been comminuted into fragments, but the incrustation had served to support the fragments and to prevent their loss. In the proportion of face to cranium, the skull was characteristically human. The cranial cavity was small, as in the crania of those skulls with jaws showing the simian characters of the Piltdown skull and the Heidelberg jaw. The skull was that of an individual of about 15 years. Primitive men had migrated by navigation into Australia. It was usually held that a second migration had occurred later. The primitive inhabitants had been driven south into Tasmania, where their descendants had become extinct during the last century. The question naturally arose whether this skull could be associated with Tasmanian skulls. The examination had, so far, revealed no such association. The skull was that of an extremely primitive Australian. Its primitive characters were suf-

ficiently numerous to warrant its comparison with the Piltdown and other primitive skulls.

Mr. Joynton Smith was glad of the opportunity of forwarding the study of anthropology in Australia. It was the first occasion on which he had been within the walls of the University. He had been a student of the university of the world, in which information and experience was bought often at great cost. Those who had not received an education at a university frequently burned much midnight oil in acquiring, during middle-age, the knowledge that they had missed when young. He referred to the value of the University to the community, and to the famous men among its graduates. He was pleased that Dr. J. F. Flashman had offered him the opportunity to take a part in assisting its work. He could make no remarks on the skull, but he could present it to the Chancellor for the University.

Sir William Cullen, as Chancellor, accepted the skull on behalf of the Senate. He thanked Mr. Joynton Smith for his ready response to the suggestion that he should purchase the skull to present it to the University. Future generations would remember Mr. Joynton Smith's name in association with his gift.

———o———

THE PATHOLOGICAL CLUB OF SYDNEY.

Originally formed as a medium for the exchange of opinion between laboratory workers, some twelve years ago, the Pathological Club has undergone a process of evolution and subsequent lethargy. According to its original rules, the Club consisted of 20 ordinary members and a certain number of honorary members, and each ordinary member was required to make two communications in the course of three years. Fines and various other measures were adopted to keep the members actively employed in the business of the Club, and the object of promoting the scientific study of medicine by discussion was materially furthered by these means. We understand that the meetings were conducted in a more or less informal manner, and a very excellent regulation provided that no communication should be published without the express consent of the contributor. In this way, subjects were discussed and opinions and ideas exchanged before any publication was made.

Some modifications in the regulations have been rendered essential, as a result of the waning interest of members. The fines have been waived; members are no longer compelled to read two papers every three years, and the objects of the Club have been extended to embrace besides medicines, the allied sciences. But, in the main, the same healthy, scientific atmosphere persists, and the handful of members attending the meetings are earnest in the search for truth.

On June 8, 1915, some seven members gathered together in the Micro-biological Laboratory at the Board of Health, to listen, see and speak. When Dr. Ferguson began to demonstrate the splendid collections of flies, mosquitoes and other insects belonging to the Laboratory, the members shook off all reserve, and interspersed his illuminating descriptions of the anatomical characters and biological peculiarities of each species with a cross fire of questions, which lent interest and life to the proceedings. The collection which Dr. Ferguson demonstrated to the members of the New South Wales Branch of the British Medical Association on June 4, 1915, were dealt with. The collection of mosquitoes was not complete, owing to the fact that a number of specimens had been removed for the purpose of identification. Among the more interesting matters raised, mention may be made of the *Stegomyia atripes*, which abounds in the neighbourhood of Sydney and in the Blue Mountains, as well as in other parts of Australia. Dr. Cleland pointed out that this mosquito possessed a curious habit of attacking the nostrils of animals. It appears to prefer moist places to bite. This mosquito might transmit the parasite of yellow fever, if it were introduced into Australia. Another species of stegomyia had been discovered and described by Dr. Bancroft, but had not yet been graced with a name. The *Mucides alternans*, commonly known as the Scotch Greys, attracted both admiration and a shudder when Dr. Dods spoke of the vicious manner in which it bit, even through clothes. Dr. Cleland raised an interest in the common *Culex fatigans* in its connexion with the house sparrow. As far as was known, the sparrow was the only small bird harbouring a plasmodium. Dr. Cleland suggested that when the birds migrated to Australia, they were already infested. Since the sparrow nested under the eaves and in other places of human habitation, and since the common mosquito was distinctly a house inhabitant, it was easy to explain how it was that the latter acted as an intermediate host for the plasmodium between sparrow and sparrow. In all, some half of a dozen new species are included in the collection.

The next stage in the proceedings concerned itself with the examination of pathological specimens. Fat dissociation of cattle raised the question of why this condition should arise. Dr. Cleland suggested that the dissociation was due to an interruption of the circulation in excessively fat beasts, with a consequent splitting up of fats deprived of nutrition. Dr. Chapman pointed out that lipase was found in the kidneys, in the muscle, in the liver and in the pancreas in these cases.

Another interesting condition which gave rise to some speculation in regard to its pathology and ætiology was the so-called Illawarra red water. The bladder in this condition is the seat of numerous angiomatous tumours. In a case demonstrated, carcinomatous degeneration had supervened. Dr. Corlette suggested that some of the obscure cases of essential hæmaturia in man might be analogous to this condition. Dr. Cleland emphasized the difference between this condition and hæmoblobinuria.

A small series of cases, dealing with difficult points in medical jurisprudence was demonstrated. In one, the vagina of a child aged about 10 years was shown. There were numerous tears, and the condition was certainly associated with some form of criminal assault. In another specimen, the vagina of a woman was found to have two lateral tears or cuts reaching up as far as the fornices, while in the introitus there were several small, clean cuts. Dr. Cleland asked for suggestions as to how these cuts or tears had been inflicted. He pointed out that the woman had died of hæmorrhage, and also that spermatozoa had been found in the vagina. The majority of the members favoured the view that a semi-sharp instrument had been used, and that the mucous membrane had been injured by incision rather than torn by dilatation. A chisel was suggested as a possible means, and other suggestions were thrown out.

Dr. Burton Bradley exhibited two interesting microscopical specimens, but in view of the probability of these specimens being shown at a meeting of the New South Wales Branch of the British Medical Association, perhaps we had better not anticipate their nature. The seven members profited by their informal discussion with one another, and we feel that there is every reason why this Club should not be allowed to lapse into nothingness.

———o———

THE NEW EDITION OF THE BRITISH PHARMACOPŒIA.

Medical practitioners of New South Wales are reminded that the 1914 edition of the British Pharmacopœia came into force on July 1, 1915, and that from the present date onward all prescriptions will be dispensed in accordance with the instructions contained in this edition, unless the prescription be marked that the formulæ of the older edition should be followed. Members will do well to make frequent reference to the various pamphlets and articles on the changes introduced, until they become quite familiar with the change in dosage and in strength of the various preparations.

ADELAIDE HOSPITAL.

An announcement by the Chief Secretary, the Honourable A. W. Styles, in regard to the Adelaide Hospital question has been published in the daily press. He anticipates that action will be taken very shortly, and that reference to the matter will be made in the Governor's speech at the opening of Parliament in July. The Chief Secretary apparently favours the scheme for the erection of what is, to all intents and purposes, a new hospital,

Abstracts from Current Medical Literature.

OPHTHALMOLOGY.

(1) Incipient Cortical Opacities of the Lens.

Jessop (*Trans. Ophthalm. Soc., U.K.*, 1914) deals with cases of opacities in the lens, in which the prognosis is good. The lenticular changes he refers to are very characteristic, progress slowly and affect vision very gradually, if at all. They take the form of thin, short, straight striæ in the cortex, dull, dark grey by reflected light, and black by transmitted light. They are situated in the superficial layers of the cortex, between the periphery and the equator of the lens, and are often hidden by the iris. At times they form a ring round the lens, and may be described as an *arcus senilis lentis*. The condition is found in many people over 70 years of age. The author has collected 50 cases of this nature, 29 in females and 21 in males. One patient, 88 years old, was told 30 years before that he had cataract, and would soon need an operation. His vision was still $\frac{6}{-}$ in each eye. Another patient, aged 55, had vision $= \frac{12}{6}$ $\frac{6}{-}$ (partly) in each eye. Five years previously she was told she had cataract in each eye. In some cases the failure in vision was due to glaucoma, tobacco, or senile macular changes. Some of the patients resort to cataract curers, who use ointments, douches, massage, etc.; but any improvement attained by them is probably the result of suggestion or improved general health. The author suggests the term senile lenticular opacity instead of cataract for this condition, and is of the opinion that a surgeon would be justified in saying that they were not cases of cataract if the patient asked the question.

(2) The Treatment of Dislocation of the Lens.

Wray states that dislocation of the lens occurs once in 5000 cases (*Trans. Ophthalm. Soc., U.K.*). A lens slightly displaced may remain clear indefinitely, but when the edge is seen in the undilated pupil, the prognosis is grave. The conditions that affect the prognosis most seriously are (*a*) high myopia, especially in young subjects; (*b*) the condition of the suspensory ligament; (*c*) the mobility of the lens; (*d*) the amount and direction of the displacement. In slight cases, glasses are ordered and general advice given, such as not to look out of carriage windows when the train is in rapid motion. The mildest cases are discovered by a discrepancy between the keratometer and retinoscopic findings. If the aphakic part of the pupil has to be used for visual purposes, the question of an iridectomy may arise, if contraction of the pupil interferes with vision. The iridectomy may be performed by introducing a knife-needle 2.5 mm. from the corneal margin and passing it under the widely dilated iris. The cutting edge of the knife is then turned forward, and the iris cut against the cornea. When dislocation or glaucoma threatens, the lens may be needled or extracted. Needling may be difficult or unsafe, owing to the instability of the lens. Experiments on animals have convinced the author that the danger of loss of vitreous after extraction has been exaggerated, and he is inclined to the belief that the earlier the operation is done after the tenth year the better. Complete luxation into the vitreous without causing trouble is not sufficient reason for extraction, but if irritation is set up it should be done. If possible, the lens should be made to appear in the anterior chamber by dilating the pupil, placing the patient for some hours in a prone position, and if the lens comes into the anterior chamber, it should be secured there by closing the pupil with eserine. Lenses dislocated into the anterior chamber must always be removed, if it is impossible or undesirable to replace them by therapeutic measures.

(3) Glaucoma and the Blood Pressure.

Before giving the results of his own researches, MacRae (*Ophthalmoscope*, April, 1915) presents a short historical resumé of the work on this subject by Frenkel, Krämer, Kummell and others. There is a general opinion that a rise in blood pressure is followed by a rise in intra-ocular tension. The patients examined were out-patients at the eye clinic of the Royal Infirmary of Edinburgh. They were examined under the same physiological conditions, such as the time of the day, interval after food, etc. The apparatus used was Martin's modification of the Riva-Rocci. In all the glaucoma cases, and in many of the controls, the eye-pressures were taken by Schiötz's tonometer. Twenty cases of primary glaucoma were examined, and 71 control cases. Arranging the results in decades according to the ages of the patients, he found that in the 40-49 group the glaucoma pressure was higher by 6 mm. Hg.; in the 50-59 the glaucoma pressure was lower by 12 mm.; and in the 60-69 group the glaucoma pressure was lower by 5 mm. This result was not uniformly either in favour of or against the theory that the average blood pressure in glaucoma is high, but rather tended to oppose it. To eliminate the factor of chance, larger numbers would be necessary, and the question suggests itself, is the research worth while? It is doubtful if the Riva-Rocci apparatus gives the actual blood pressure. Recent investigation seems to show that it really gives the blood pressure, *plus* the resistance of the artery to obliteration of its lumen, and this latter resistance may form a not inconsiderable part of the reading. The resistance of the artery wall is an important factor in patients of the ages at which glaucoma occurs. An experiment was made with three young subjects; their blood pressure and ocular tension were taken before and immediately after short, violent exercise. It was found that, while in each case the blood pressure was increased after exercise, in only one patient was the eye tension higher; in one case it was lower. This and other experiments suggest that the importance of blood pressure in affecting the eye tension has been exaggerated.

(4) The Effect on Accommodation of the Viscosity of the Lens.

Lancaster and Williams deal with the subject of the viscosity of the lens (*The Ophthalmoscope*, March, 1915). An individual, with his head and chin suitably fixed and supported, is seated in front of a graduated scale bearing a test object, which can be moved backwards and forwards before one eye. The near and far points are estimated, and the object is fixed at the near point. The object is then moved considerably nearer than the near point, and the subject is told to fix it and signal when it becomes clear, and the time is recorded. The subject at first finds the object quite blurred, but if the effort is continued, in about two minutes he finds that it becomes quite clear and in focus. In explaining this and other experiments of a similar nature, the authors accept the Helmholtz theory of accommodation. The suspensory ligament is relaxed by contraction of the ciliary muscle, and the lens is therefore free to assume its proper or natural shape. The experiments show that when the zonule is relaxed, there is an initial change, which occupies a short time (less than a second), but that the change does not stop there. The lens obviously continues to become more convex, though at a slower rate. The first change is due to the elasticity of the lens, for the quality causing the second change the authors suggest the variations in viscosity.

(5) Ophthalmic Injuries in Warfare.

In an opening paper on this subject W. Jessop (*Trans. Ophthalm. Soc., U.K.*, 1915) first enumerates the missiles used such as conical lead bullets, with mantles of steel or cupro-nickel; shrapnel shell, filled with iron, lead or mixed metal bullets; common shell of cast-iron or steel, with a time fuse of copper or aluminium, filled with explosive. Other foreign bodies found in wounds in warfare include stone, glass, powder and pieces of clothing. Trench fighting has produced a large proportion of head injuries and wounds of the orbit, the bullet in nearly every case destroying the eye-ball and perforating the orbital wall. A skiagram should be taken to localize any foreign body present, but probing should be avoided. The profuse intra-orbital hæmorrhage causes œdema and proptosis, and the tissues quickly become septic. It is best to foment the wound and remove the eye-ball later, bearing in mind, however, the risk of sympathetic inflammation. It is suggested to eviscerate the ocular contents, then

to free the sclerotic all round and to remove it, except a cuff around the optic nerve. This obviates the opening of the nerve sheath, and lessens the risk of meningitis. Eye-lid injuries are common, and on account of the œdema, sutures should be avoided. The cornea is frequently perforated by a foreign body, which should be localized and removed by the magnet, if of iron or steel. In the author's experience, it is usually nickel. Sympathetic involvement must always be borne in mind, and great discretion is needed in the endeavour to save an eye. In the Franco-Prussian war, 97 cases were recorded, or 55% of injuries to the eye-ball. Forty-two cases followed complete destruction of the eye-ball, and only four were associated with a foreign body. So far, none have been reputed in the present war. The author has seen only one case of injury to the ocular nerves. The patient was wounded above the left zygoma, and had paralysis of the left third, fourth, and superior division of the fifth nerves. Papillœdema is frequently associated with wounds of the vault of the skull, especially depressed fractures. The swelling of the nerve head is, as a rule, not great, but sometimes three to five diopters. Of the occipital lesions, fractures of the skull over the occipital lobes are often accompanied by hemianopsia. There is generally at first complete blindness, followed by permanent field of vision changes, either complete or quadrantal hemianopsia, while the vision is restored. The injury produces diaschisis or shock on the systems and groups of neurons correlated with the cortical damaged or destroyed neurons. Temporary blindness, lasting rarely more than a week, was recorded in many cases after severe explosions. The ophthalmoscopic appearances were normal, and the condition was sometimes associated with other manifestations of psychic shock.

LARYNGOLOGY AND OTOLOGY.

(6) Prolapse of the Ventricle of the Larynx.

Gordon B. New records two cases of prolapse of the ventricle of the larynx (*Laryngscope*, March, 1915). In the first case the patient had suffered from cough for five years, and also from hoarseness. The latter symptom had got much worse during the last six months, until the voice became a mere whisper. There was no wasting, pain or dyspnœa. A smooth, globular tumour, with a broad base, was seen emerging from under the anterior two-thirds of the right false cord and hanging into the glottis. It was easily indented with a probe, and the mass could be tucked back into the ventricle. The patient refused operation. In the second case, hoarseness and coughing had been present for six months, and the voice was almost lost. There was some dyspnœa. A smooth, greyish-pink round tumour emerging from the anterior half of the right false cord, lay on the true cord, and occluded the glottis. The tumour was replaced into the ventricle, but after coughing reappeared. It was seized by Brünings' forceps and a wire snare slipped over it. The removal was effected close to its base. The patient's voice was immediately restored to normal. Prolapse of the ventricle of the larynx is said to be due to a chronic inflammation and hypertrophy of the mucous membrane. Koschier has stated that the mucous membrane is not everted in these cases, but that the tumour is due to œdema, chronic inflammation or retention cysts. The condition is met with in tubercular and syphilitic subjects. It is usually unilateral, but may be bilateral. It has to be distinguished from fibromata and gummata.

(7) Laryngeal Obstruction.

C. Graef (*Med. Rec.*, April 10, 1915) records three cases of laryngeal obstruction arising from different causes. In the first case dyspnœa and hoarseness had existed for several months. When seen the patient was gasping for breath, and, in the course of examination breathing stopped altogether. The author had no instruments at hand, and, recognizing that artificial respiration was useless, was forced to wait until a tracheotomy tube and a scalpel could be fetched. The trachetomy was complicated by the fact that a considerable time had elapsed since the patient had stopped breathing, and by the opening of a large vein in the crico-thyroid space. After the tube was inserted artificial respiration was carried out, and continued for a long time before breathing restarted. He eventually recovered. The cause of the obstruction was a laryngeal gumma. The second case was equally unusual. The patient, a child aged 11, was undergoing the operation for mastoiditis, when the respiration was impeded and stopped. There had been some previous bleeding of the nose. As blood-stained frothy mucus was present in the mouth, the throat was swabbed out, and a mass was withdrawn from the larynx and trachea. This proved to be an organized blood-clot measuring six inches in length and half an inch thick. It appears that the clot had been lying in the nasal fossæ for some time before the operation. In the third case laryngeal obstruction was due to the inhalation of fragments of bone detached at an operation on the turbinated bone. According to the patient's account, this operation had lasted for over two hours, and there had been much hæmorrhage. The first piece of bone was coughed up seven weeks after the operation, while a second piece was expelled six months later. The patient made a good recovery.

(8) Suppurative Labyrinthitis.

An instructive case of suppurative labyrinthitis, followed by meningismus, and associated with irritation of the Gasserian ganglion, is reported by C. E. Ide (*Laryngscope*, March, 1915). The patient, aged 17, had a discharge from the ear for three years. The discharge stopped, and severe pain in the right ear, extending into the right temporal region and into the throat ensued. There was nausea, but no vomiting or vertigo. The temperature was raised. The drum was absent, and there were abundant polypoid granulations arising from the promontory. Fistula test was pronounced. After removal of the granulation tissue, caries of the bone between the oval and round windows was seen, and a fistula leading into the cochlea was detected. A complete mastoid operation was performed. The mastoid was sclerosed, and eburnated, and no other cells than the antrum were discovered. The author points out that the condition was one of labyrinthitis rather than mastoiditis, since there was practically no mastoid to be involved. The carious bone was curetted away, and it was found that the cochlea and the vestibule were involved, but not the semi-circular canals. Following the operation some vertigo, a single attack of vomiting, and recurrent pain occurred. The pain at the supra-orbital, intra-orbital, and mental regions indicated that there was irritation of the Gasserian ganglion. Signs of meningismus developed, but subsided without further operative treatment. The convalescence was slow, but healing took place without further complications.

(9) Bullet Wound of the Pharynx.

C. W. M. Hope (*Proc. Royal Soc. Med.*, March, 1915) records the case of a man who was shot in the neck while resting two miles behind the firing line. The entrance wound was 1½ inches above the clavicle, behind the right sterno-mastoid. The bullet was removed below the angle of the left lower jaw. Ten weeks later brawniness of the neck on each side of the larynx was noticed, and a hard mass was felt near the right transverse process of the lower cervical vertebrae. Swallowing was difficult, and there was weakness of the left vocal cord. The post-cricoidal pharynx was found to be obstructed by two nipple-like processes of granulation tissues. No abscess cavity was found. The patient made a good recovery after the granulations had been removed.

(10) Synechiæ in the Nose Treated by Diathermy.

Dan McKenzie reported a case of a shrapnel wound of the face (*Proc. Royal Soc. Med.*, March, 1915). The ball had traversed the face, passing through the nose. Masses of scar tissue developed during healing. The author determined to use diathermy, Schall's small instrument being employed. The result was excellent. There was no reaction of swelling, and no re-formation of cicatrical tissue had taken place.

British Medical Association News.

SCIENTIFIC.

A meeting of the Victorian Branch was held at the Medical Society Hall, East Melbourne, on June 2, 1915, Dr. Honman (The President) in the chair.

Dr. Llewellyn Lambert read a paper on "Duodenal Ulcer from the Surgical Standpoint." The text of this article will be found on page 8.

Dr. A. V. M. Anderson read a paper on "Duodenal Ulcer." The text of this article will be found on page 10.

Dr. J. F. Wilkinson discussed the subject from a physician's point of view. He said that the first problem presenting itself was that of diagnosis, which was not so easy as some people thought. He would be loath to diagnose duodenal ulcer too readily, and would accept the statement made by Dr. Anderson that physicians looked for some lesion such as appendicitis or gall-stones in cases which present suggestive symptoms.

Cases of chronic gastritis, catarrhs, and nervous inhibition existed, which presented symptoms protean in nature, of an ulcerative or reflex character, but not associated with distinct lesions of this nature. Nervous reflex cases were often seen. A patient of his was perfectly well until she saw a man drop dead. She had symptoms like those of duodenal ulcer, blood in the fæces, etc.; the primary cause was a nervous lesion, leading to inhibition of gastric juice.

In cases of alcoholic gastritis and irritation of the gastric glands, the symptoms were often similar to those of duodenal ulcer; there was pain after food and sometimes occult blood in the stools. Chronic gastritis at times resulted from over-eating of albuminous food. There was thus a large group of cases which should be carefully investigated before the diagnosis of duodenal or gastric ulcer were made.

As to duodenal ulcer, it was difficult to determine whether it occurred on the duodenal or the gastric side of the pyloric vein. Hyperacidity was an important sign in cases of duodenal ulcer. He always tested the acidity of the gastric contents, and, in the absence of hyperacidity, he was loath to diagnose duodenal ulcer. It had been suggested that duodenal ulcer was due to the excessive secretion of HCl. Recent physiological investigations, however, had demonstrated that the HCl content of the normal gastric secretion was higher than was formerly thought. It might be as much as two, four or even six times as high as the values that used to be accepted as normal. It also appeared that a reflux of pancreatic juice through the pyloric opening took place normally to limit the acidity. In the presence of hyperacidity, fibrin could not be digested. This could easily be proved in a water bath by adding 0.4% HCl to the gastric juice, when it would be seen that the digestion was considerably delayed. It was necessary to keep the acid in check.

Duodenal ulcer set up spasms which prevented this reflux. When the pylorus relaxed, an irritating gastric juice was secreted. In duodenal ulcer he would expect to find a tender spot on the right side of the mid-line, and a little above the umbilicus; but he would not make a diagnosis on that alone. The presence of occult blood in the stools lent additional weight to the diagnosis. If symptoms of tenderness, hypersecretion, occult blood and a history of remissions, the patient being quite well and able to eat anything at one time, and later exhibiting these symptoms again, were met with, the diagnosis of duodenal ulcer was justified. But Dr. Wilkinson would not guarantee that an ulcer would always be found if an operation were performed. He gave the details of a typical case of duodenal ulcer. A man was standing in his backyard; later he found himself on the ground. He had evidently fainted. He had a desire to go to stool, and passed a large amount of tarry matter. He had a history of pain three or four hours after food, and marked hyperacidity. Hæmorrhage was so severe, and he was so acutely ill, that he was advised to be operated upon. An operation was performed, but no sign of duodenal ulcer was found; the duodenum was not opened, as this was regarded as unjustifiable. There was no thickening anywhere. The appendix was examined and found to be adherent to the caecum. The adhesions were divided with scissors. There was no sign of previous appendical trouble. The patient recovered after one slight recurrence. No doubt he had acute duodenal ulcer.

The speaker pointed out that the treatment did not consist in performing gastro-enterostomy. The cause of the duodenal ulcer should be sought. When perforation took place, the ulcer should be closed, and if it appeared that obstruction would probably result, gastro-jejunostomy should be carried out. A septic focus should be sought in all cases. The appendix might appear to be almost natural; perhaps it might be a little thickened; but it might be full of offensive pus, and if there is the least suspicion of its being a septic focus, it should be removed. Otherwise, it might prove a source of infection for many years.

In regard to hæmorrhage, Dr. Wilkinson said that if a patient had had one severe hæmorrhage, threatening life, and if symptoms of ulcer, with continuous presence of occult blood in the fæces were present, it would be wise to operate. An unhealed ulcer might bleed at any time. He had seen two deaths from hæmorrhage due to a duodenal ulcer. One man recovered from the first hæmorrhage, and the speaker could not explain why he did not survive the second.

Gastro-jejunostomy as the sole treatment was open to criticism; its results were very unsatisfactory. Physicians obtained equally good results, as Dr. Anderson had shown. Bad results at times followed gastro-jejunostomy, and patients sometimes died of persistent vomiting. It would be quite satisfactory if the ulcer could be excised without narrowing the gut. These cases were not cured by the surgeon. It was often necessary to overcome dilatation by diet and the hyperacidity by alkalies, etc. Hyperacidity and symptoms of spasm often persisted for some time after the operation. By giving acid-binding substances, *e.g.*, belladonna, almond-oil emulsion, and alkalies after meals, and by employing a diet which did not stimulate the secretory glands, the patients tended to get well, at least symptomatically. That was all the surgeons could claim to do. Sometimes the original source of sepsis remained. A great deal could be done by medicinal treatment after operation, to prevent relapses. Stomach dilatation must be considered in case of obstruction. It did not always develop; the stomach was often able to overcome the obstruction fairly well. A great deal of obstruction was due to spasm. When the spasm was removed, no further treatment was necessary. The cardiac muscle might become insufficient if the obstruction were not relieved and the stomach wall failed to overcome it.

In acute hæmatemesis the Lenhartz diet should be started at once. He had given it in two cases 24 hours after a severe hæmatemesis with satisfactory results. To begin with, four ounces of milk were given on the first day, and two eggs beaten up in an equal quantity of water and half of an alkaline powder. The quantities were increased gradually. After a fortnight, a diet containing 3,000 calories per day could be given. The speaker pointed out that nothing had been said of X-rays. They did not help in the diagnosis, except in the indication given by rapid emptying of the stomach. Chemical investigation should, in all cases, be carried out first. It was essential that skiagrams should be taken with short exposures. The presence of a duodenal ulcer could be assumed if the shadow always appeared in the same situation. It was important that several skiagrams should be taken. Röntgen rays might show duodenal distortion or obstruction or adhesion. It was often valuable from that point of view, but the effect of reflex spasm had to be eliminated, for apparent obstruction had been noted by himself, with reverse peristalsis, and, on operation, nothing abnormal was detected.

Dr. Konrad Hiller thought that medical treatment should not be instituted until all doubt as to the diagnosis of duodenal ulcer had been removed. The condition of the patient at times improved under medical treatment. If the symptoms recurred, he advised his patients to submit to operation. The Lenhartz diet was not always a success. He favoured giving antacids. Some patients could not take eggs, and vomited after they were given; the treatment had to be discontinued. Local treatment, such as the application of blisters, was of use at times.

Mr. Hamilton Russell said that experience often caused him to change his mind, and he had hoped to be informed in the matter of duodenal ulcers. Dr. Wilkinson had spoken of pyloric spasm, and had implied that it was to be treated medically rather than surgically. It had always seemed to him as one of the conditions which were amenable to surgical treatment by gastro-enterostomy. It was not difficult for a surgeon to realize why gastro-enterostomy should have a marked effect on pyloric spasm. There was a debatable point raised in regard to hæmorrhage. Dr. Wilkinson was inclined to suggest surgical interference early and readily. This surprised him; he understood that surgeons hesitated before recommending their patients to submit to operation for hæmorrhage, because the prospect of success when the bleeding was profuse was small. The worst cases were those in which there was no defined ulcer. The chance of finding the ulcer when the patient was *in extremis*, and of excising it, was not good. Some years ago he had operated on two patients suffering from severe gastric hæmorrhage. In one he performed gastro-enterostomy during an attack of hæmorrhage, without attempting to look for the source of hæmorrhage; there was no recurrence. The other patient had been operated upon several years ago. She had been cured permanently by gastro-enterostomy. This might not pass as orthodox surgery at the present day. He confessed that he was unable to satisfy himself as to when duodenal ulcer was present and when not; he was unable to make a certain diagnosis, as Mayo seemed to do. He did duodeno-gastrostomy less frequently now than formerly. When melæna was present, if there was any reason to suspect duodenal ulcer, he would suggest operation rather than run the risk of hæmorrhage.

Dr. W. R. Boyd said that his experience was unfortunate; he had seen most lamentable results following gastro-enterostomy. To suggest gastro-enterostomy for spasm of the pylorus struck him as extraordinary. He had seen patients vomiting persistently as a result of gastro-enterostomy, and almost at death's door, and he had to appeal to the surgeon to undo his gastro-enterostomy and put things back as before. Dr. Anderson's statistics were comforting. According to Mayo, gastro-enterostomy was a simple thing. He would not allow a patient of his to undergo gastro-enterostomy, unless the pylorus were excised. Duodeno-gastrostomy appeared to have been performed as though the stomach was a tin-box. A hole was made at the bottom of the stomach for the food to pass through; nevertheless, the duodenal contents got back into the stomach. A vicious circle was established in this way, to the disconcert of the surgeon.

Dr. Sewell, in referring to Dr. Wilkinson's remarks, said that a great risk was run if patients were treated for some time for nervous dyspepsia. A complete investigation should be carried out before the diagnosis of irritant dyspepsia was made. Cases of this kind were rare. Organic causes could be found for the condition of hyperchlorhydria.

Dr. Andrew Honman said that, in his experience, cases of duodenal ulcer, and especially cases of perforation, were very rare in general practice; yet the number of perforated duodenal ulcers in hospital practice showed that this condition was not really rare, and was one that especially attacked a class of hospital patients. He had opened a number of abdomens, on the advice of physicians, for duodenal ulcers, but had never been able to find one. He had found all kinds of conditions, the commonest one being adhesions between the gall bladder and the duodenum. He thought that Dr. Boyd was rather severe on the surgeons, but no surgeon would operate in these cases, unless he had taken the advice of a good physician, and it was not the fault of the surgeon if he should fail when the physician had failed. The diagnosis of pathological lesions of the stomach and duodenum had been greatly enhanced by the use of the gastroscope, as described by Rovsing.

Dr. Lambert, in reply, said that he was struck with the difficulties of diagnosis, as compared with the ease with which Mayo seemed to diagnose his cases. In one case the patient said that he had no digestive symptoms. This was quite common. There was often only an indefinite pain and a feeling of fulness, not associated with the taking of food. He could not understand why gastro-duodenostomy should not be performed, provided the patient's condition was fair. The vicious circle referred to by Dr. Boyd must have been due to faulty technique, and not to the operation; probably it was due to obstruction. Dr. Anderson said that Dr. Wilkinson had found nervous dyspepsia in cases where there had been an increase of hydrochloric acid in the stomach. In some cases there was evidence that an excess of hydrochloric acid was the cause. Before diagnosing nervous dyspepsia, one should be certain that no other pathological condition existed. There was a tendency to look for some organic cause, and if it could not be found, to fall back upon nervous dyspepsia. People ate too much carbohydrate. He believed that pyloric spasm might be caused by the secretion of an excess of hydrochloric acid, but not that the excess of acid caused the spasm.

A meeting of the Eye and Ear Section of the Victorian Branch was held at the Eye and Ear Hospital on May 25, 1915, Dr. S. A. Ewing, the President, in the chair.

Dr. Ewing showed a case of *sarcoma of the maxillary antrum with sinusitis*, in which excision of the superior maxilla had been performed. The patient, a male aged 51, gave a history of an offensive odour from the nose for 12 years, and of a copious, purulent nasal discharge for 18 months. The left side of the nose was filled with polypi and firmer growths. The left antrum was dull on transillumination. The nasal passages were cleared of the growths, and the antrum explored at a preliminary operation. The latter was found to be full of granulation tissue, and of growths which proved to be small spindle-celled sarcoma. After the suppuration had subsided the second operation was undertaken. The upper jaw was excised, and the ethmoidal region cleared up with the aid of punch forceps. Some infiltration of the cheek was found. The cheek and the bony cavity were being treated with radium. There was no apparent deformity of the face.

Dr. Ewing also showed a man, aged 62, with a growth of the larynx. There had been slight dysphagia for three months. The aperture of the larynx was partly occluded by a growth arising from the arytenoid region. In the cervical region, and especially toward the root of the neck there were several hard enlarged glands. He expressed the opinion that operative treatment would be useless in this case.

Dr. Murphy agreed that the glandular involvement was too extensive to warrant operative interference.

Mr. Edward Gault demonstrated a fixation apparatus on a child aged 5. The apparatus had been made by Dr. O'Hara Wood. It fixed the arm for the purpose of grafting skin flap on to the lower lid.

Dr. John Murphy showed a case in which tracheotomy had been performed for *acute laryngeal oedema*.

Mr. Edward Ryan showed a case of *retinitis*, and one of *tuberculosis of the conjunctiva*.

Mr. Leonard Mitchell demonstrated a case of *pharyngeal tumour*. The patient was a man 50 years of age, from whom Dr. Fitzgerald had removed a growth from the left side of the throat 35 years before. Two years before the patient noticed the reappearance of the growth, and his wife stated that he made a gurgling sound when asleep. During a few months prior to his admission his voice had become altered and thick as if he had had a cold.

A large elastic firm growth, covered by healthy mucous membrane, was seen springing from the left lateral wall of the pharanx. It apparently arose between the pillars of the fauces on the left side, from either the tonsil or deep in the pterygoid region. It was not adherent to the anterior edge of the palatal fold. No enlarged glands were palpable. The larynx was apparently healthy, and the palate was not involved. Three weeks after admission the growth was appreciably larger, and the patient complained of increased discomfort. The palate had become adherent to the growth along two-thirds of its extent. The mucous membrane covering the tumour was slightly injected and adherent. The tonsil was displaced downwards toward the opening of the larynx.

Mr. Edward Gault, who had seen the patient on admission, was of opinion that the tumour had increased in size. He was doubtful whether the present growth had any connexion with the tumour removed 35 years before.

Dr. Jno. Murphy suggested that the appearance of the tumour and its recent increase in size pointed to the diagnosis of sarcoma. He was of opinion that it was continuous with the tonsil.

Dr. Ewing said that he was inclined to regard it as a cystic, or possibly a malignant, growth. He had had a similar case in which the tumour was shelled out of the tonsillar region. He advised complete removal.

BELGIAN DOCTORS' RELIEF FUND.

New South Wales.

The following subscriptions have been received by the Council of the New South Wales Branch:—

	£	s.	d.
Amount previously acknowledged	609	5	6
Dr. Allen, Hugh, Newcastle	1	1	0
„ Florance, E., Cootamundra..	1	1	0
„ Horsfall, W. N., Hamilton	1	1	0
„ Martin, J. H., Sydney	1	1	0
„ Monti, S., Broadwater	1	1	0
Total	£614	10	6

South Australia.

The Treasurer of the South Australian Branch, Dr. Lenden, begs to acknowledge the receipt of the following additional subscriptions:—

	£	s.	d.
Amount previously acknowledged	461	8	0
Dr. Bartley, J. F., Broken Hill	*2	2	0
„ Birks, M., Broken Hill	†0	10	6
„ Chapple, Phœbe, Adelaide	‡2	2	0
„ Clarke, Lowther, Petersburg	2	2	0
„ Frayne, E. J., Woodside	1	1	0
„ Heynemann, A. V., Blythe	1	1	0
„ Hunter, W. A., Salisbury	1	1	0
„ Magarey, Cromwell, Norwood	†3	3	0
„ Purves, C. W., Eudunda	¶1	1	0
Total	£475	11	6

* For June and July. † Third Donation. ‡ For May and June. ¶ Second Donation for May.

THE CONFERENCE BETWEEN THE DIRECTOR-GENERAL OF MEDICAL SERVICES AND THE FEDERAL COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION.

A meeting of the Federal Committee was held in Melbourne on June 25, 1915. The meeting had been called for the purpose of considering a scheme for organizing the medical profession for military duty, submitted by the Director-General of Medical Services. Prior to the meeting, a Conference was held at which the Director-General, the P.M.O.'s of each State, the Members of the Federal Committee and the honorary Secretaries of the Branch took part.

Dr. W. T. Hayward, the President of the Federal Committee, called attention to the urgent need of action in the present emergency. He described the situation as very serious.

The Director-General of Medical Services, Col. Fetherston, gave a short account of the existing circumstances that had led up to the present position. In addition to supplying the necessary medical officers for Australian forces sent to the front, there had been repeated demands from England for men to supplement the medical forces there. In February, 100 men had been asked for, for service with the R.A.M.C. in England. Later, a request for a large double hospital had been made. Still later, cables had been received, asking for more men for reinforcements for Egypt. Another hundred men were wanted, and the latest request was for an unlimited supply of medical men.

There was also a need for men to attend at the hospitals which would necessarily be established in Australia for the returning wounded soldiers, and a further need for men for transport service. Col. Fetherston felt that the only way to meet all these demands would be for the medical profession as a whole to be organized in such a manner that each individual might contribute that work for which he was best fitted. Arrangements had already been made with the Universities for accelerating the course of the medical students by anticipating the dates of the examinations for the fourth and fifth year students. By this means there would be a fresh supply of young men ready for service in May and June of next year. The greatest pressure, however, would be in the intervening months.

For the purpose of facilitating the business of the meeting, he had cabled the following questions to the War Office:

(*i.*) Can hospital positions be promised to older men going to England?

Reply: No. An endeavour will be made to use them to the best advantage, but they must be ready to go anywhere and do anything necessary.

(*ii.*) Can senior men, fully competent, be given rank of captain or major?

Reply: No; but officers of three years' past experience in higher ranks would be considered.

(*iii.*) Can the age limit of 40 years be abolished?

Reply: No; but 20% of men aged 40-45 will be accepted.

(*iv.*) What is the shortest period men will be accepted for service.

Reply: One year, or duration of war, if it does not last so long.

Col. Fetherston suggested that the members of the medical profession remaining at home should be organized (*a*) for duty in camps, in order that others might be released for service at the front, and (*b*) for the staffing of hospitals for wounded soldiers in the various States.

He then sketched a scheme for the treatment of the returned soldiers. The details were tentative, and were put forward solely for the purpose of discussion.

The members considered this scheme, and also the plan of setting up complete resident staffs for each hospital. After a full discussion, a resolution was passed endorsing the Director-General's scheme, and recommending it to the Federal Committee for approval by the Branches of the British Medical Association.

The New South Wales Branch scheme of a voluntary medical service was also discussed. The military representatives, however, emphasized the necessity of some system which would enable them to follow up cases and control them. The soldiers had a right to medical attendance, and it was felt that the military authority could not leave this matter in the hands of an unpaid voluntary medical service.

After further discussion, it was resolved that the Federal Committee be asked to approve of the rate of 25s. per soldier for attendance and medicines for a period of six months.

Finally, a circular which had been drawn up by the Council of the Victorian Branch for the purpose of circularizing the members of that Branch was considered. Certain emendations were suggested, and it was resolved that the Federal Committee accept the form and take steps to have the whole of the Association in Australia circularized in this manner. The following questions were subsequently approved of by the Federal Committee for the purpose of a circular, which it suggested each Branch should send to its members.

Organization of the Medical Profession on a War Footing.

A. *Personal data*—

1. Name
2. Address
3. Sex
4. Age
5. Single, married or widowed
6. Number of dependents
7. Qualifications
8. General practitioner or specialist (if the latter, name the specialty)
9. Hospital, university or other public appointments

(N.B.—The above details are necessary for classification.)

B. *Military data*—

1. Are you prepared to accept military service abroad—
   (*a*) With the Australian forces?

(*b*) With the Imperial forces?
(*c*) On duty on hospital transports?
(*i.*) For the duration of the war?
(*ii.*) For a shorter period (not less than twelve months)?
(*iii.*) For a period of four to five months, either on duty on a hospital transport or in a small hospital?
Do you attach any conditions? If so, state them.

2. Are you prepared to accept whole time military service—
(*a*) In the Commonwealth?
(*b*) In this State?
(*c*) For short period? } In camp?
(*d*) For long period? } In hospital for wounded soldiers?

3. Are you prepared to accept part-time military service in this State?
4. Are you willing to attend convalescent soldiers in your district on terms approved by the Branch?

(N.B.—The services under 1 and 2 are the most urgent. If at all possible, it is hoped that the reply to these questions will be in the affirmative.)

C. *Civilian data*—
1. Are you prepared to, if called upon, to accept duty or extra duty in—
(*a*) University teaching work?
(*b*) Hospital teaching work?
(*c*) Hospital surgical practice?
(*d*) Hospital medical practice?
(*e*) Hospital special practice?

D. *Medical practice data*—
1. Are you prepared to make such arrangements for practice in your district as will enable one or more of your colleagues to proceed on military service?
2. In the event of any financial or other dispute arising out of such arrangements, are you prepared to submit same for arbitration to the Council?

E. *Remarks, Comments, or Observations*—

Date Ordinary Signature.

By returning this form at your earliest convenience to the Honorary Secretary of the Branch, you will be rendering a service to your country and profession.

University Intelligence.

UNIVERSITY OF MELBOURNE.

(By Our Special Correspondent.)

At a special meeting of the Faculty of Medicine on Thursday, June 24, 1915, called for the purpose of discussing the question of shortening the course, in order to allow graduates to proceed on war service sooner than would have been the case under existing arrangements, it was resolved to advise the Council of the University to recommend the Government of Victoria to introduce legislation to provide for the temporary alteration of the Medical Act, so as to allow of the registration of graduates in medicines who have not completed a full five years' course. It was also resolved to recommend the Council to introduce University legislation, under which the Faculty of Medicine, subject to any general direction from the Council, would have the power during the war to modify the course, and to shorten it, provided that it still extended over four years and one term.

The Faculty further proposes that for the present fifth year students a final qualifying examination be held in the last week in September, another towards the end of November, as well as the ordinary final examination, with provision for honours candidates in March, 1916.

Provisionally, it has been suggested that the final examination for the present fourth year students be in August, 1916, and this suggestion has the approval of Colonel Fetherston, Acting Director-General of Medical Services. These proposals will be submitted to the Council on Monday, July 4, 1915.

Professor Berry's scheme for the transfer of the Medical School of the University to a site nearer the clinical hospitals has been under the consideration of a representative committee for some weeks past, and the matter has now reached such a stage that the whole case is to be presented to the Premier of Victoria at an early date by a deputation representing the medical profession of Melbourne.

THE UNIVERSITY OF SYDNEY.

A monthly meeting of the Senate of the University of Sydney was held on June 15, 1915, at University Chambers, Phillip Street, Sydney. Present: The Chancellor (The Hon. Sir W. P. Cullen), the Vice-Chancellor (Mr. F. Leverrier), Professor Anderson, Mr. H. C. L. Anderson, His Honour Judge Backhouse, Mr. P. Board, Mr. J. J. C. Bradfield, Professor David, Mr. J. Dawson, the Hon. Mr. Justice Ferguson, Professor Haswell, Sir Philip Jones, the Hon. E. J. Kavanagh, Mr. E. W. Knox, Mr. D. Levy, Mr. J. Nangle, Professor Peden, Dr. Cecil Purser, the Hon. Mr. Justice A. H. Simpson, Sir Thomas Anderson Stuart, Mr. R. Teece, and the Warden (Mr. H. G. Barff).

Resolutions of sympathy to be conveyed to the relatives of the late Brigadier-General Sir William Throsby Bridges, K.C.B., Officer Commanding the First Australian Contingent; the late Dr. Muir Paul Smith, late Demonstrator in Anatomy, and the late Colonel Henry Normand MacLaurin, were passed.

A communication was received from the Royal Commissioners of the 1851 Exhibition, stating that no award of scholarships will be made during the war.

On the recommendation of the University Extension Board, Mr. A. R. Brown, M.A., F.R.A.I., was appointed a lecturer under the Board.

Assistant Professor S. H. E. Barraclough, B.E., M.M.E., Assoc. M. Inst. C.E., M.I. Mech. E., Lecturer in Mechanical Engineering, was appointed to the Chair of Mechanical Engineering.

Obituary.

JOHN IKIN SANGSTER, JUNR.

Dr. J. I. Sangster, junr., whose death has already been announced in *The Medical Journal of Australia*, had been in ill-health for some little time, and had been forced to relinquish his practice in Glenelg on this account. He returned to the Burra, where he resided up to the time of his death.

Born in 1872, Dr. Sangster was educated at St. Peter's College, Adelaide. He entered the University as a medical student, and graduated in medicine and surgery in 1893. In the following year he served as resident medical officer at the Adelaide Hospital. He then went to England, and continued his medical studies. In 1896 he passed the Conjoint Board examination and the Primary Fellowship of the Royal College of Surgeons. At about this time his health broke down. Returning to South Australia, he entered practice with his father in the Burra. In the course of the following years he improved in health, and was able to undertake many important duties, including those of medical officer to the Burra Hospital. He was interested in municipal matters, and took an active part in local politics. He served as Mayor of Burra for a year. In 1911 he started in practice in Glenelg. While in this town he became intimately associated with British Medical Association affairs, and was elected member of the Council of the Branch.

Dr. Sangster's geniality, his wide interests, and many other good qualities, endeared him to a large number of friends and acquaintances. He was a man who will not be easily forgotten.

Personal.

L'Academie des Sciences has awarded le Comte Prix (triennial) of £2,000 to Sir Almroth Wright, as an appreciation of his bacteriological work conducted in Boulogne.

We regret to announce the death of Dr. William John Gething, Chief Quarantine Officer of South Australia, which occurred at Port Adelaide on June 22. Dr. Gething was the son of a medical practitioner, and was born in 1862. He matriculated in 1878, studied law, and was called to the Bar in 1885. At a later date he took up medicine, and qualified in Edinburgh in 1894. He was appointed medical

officer of health and quarantine officer on the death of Dr. Toll. His experience and sound knowledge of hygiene rendered him a very valuable officer in the quarantine service.

Dr. Helen Kelsey has commenced practice at 55 Brighton Road, St. Kilda, Melbourne.

Dr. Theodore Ambrose has removed to 258 St. George's Terrace, Perth, Western Australia.

Dr. Lionel J. Robertson, late of Busselton, has started practice at 322 Hay Street, Subiaco, Western Australia.

Dr. Victor E. Ludlow, of Waverley, Sydney, has disposed of his practice to Dr. James Hunter, late of Gosford and North Queensland.

Proceedings of the Australasian Medical Boards.

QUEENSLAND.

The following have been registered under the provisions of the "Medical Act of 1867" as duly qualified medical practitioners:—

Barbour, Eric Pitty, Toowoomba, M.B., Univ. Syd., 1915.
Hoggarth, Thomas Whitecross, Townsville Hospital, M.B., Ch.B., Univ. Melb., 1914.
Rivett, Amy Christine, Brisbane Children's Hospital, M.B., Univ. Syd., 1915.
Shaw, Alfred Eland, Laidley, M.R.C.S., Eng., L.R.C.P., Lond., 1892.
Stevens, Percy Alexander, Townsville Hospital, M.B., Ch.B., Univ. Melb., 1913.

Books Received.

JOURNAL AND PROCEEDINGS OF THE ROYAL SOCIETY OF NEW SOUTH WALES, Vol. XLVIII., Part III. and Part IV., Demy 8vo., Part III., pp. 289-520, containing six plates; Part IV., pp. 22, containing Abstract of Proceedings, Title Page, Contents, List of Publications, List of Members, etc., and Index.

MEDICAL ELECTRICITY AND ROENTGEN RAYS AND RADIUM, by Sinclair Tousey, A.M., M.D.; Second Edition, thoroughly revised and enlarged, 1915. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; 8vo., 1219 pp., with 798 practical illustrations, 16 in colours. Price, 35s.

A LABORATORY MANUAL AND TEXT-BOOK OF EMBRYOLOGY, by Charles W. Prentiss, A.M., Ph.D., 1915. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; 8vo., 400 pp., with 368 illustrations. Price, 17s. 6d.

DIAGNOSTIC AND THERAPEUTIC TECHNIC: A MANUAL OF PRACTICAL PROCEDURES EMPLOYED IN DIAGNOSIS AND TREATMENT, by Albert S. Morrow, M.D.; Second Edition, thoroughly revised, 1915. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; 8vo., 834 pp., with 869 illustrations. Price, 22s. 6d.

A PRACTICAL TEXT-BOOK OF INFECTION, IMMUNITY AND SPECIFIC THERAPY, WITH SPECIAL REFERENCE TO IMMUNOLOGIC TECHNIC, by John A. Kolmer, M.D., Dr.P.H., with an Introduction by Allen J. Smith, M.D., 1915. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; 8vo., 899 pp., with 143 original illustrations, 43 in colours. Price, 25s.

DIFFERENTIAL DIAGNOSIS, by Richard C. Cabot, M.D., 1914. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; 8vo., 709 pp., 254 illustrations. Price, 25s.

A TEXT-BOOK OF DISEASES OF THE NOSE AND THROAT, by D. Braden Kyle, A.M., M.D.; Fifth Edition, thoroughly revised and enlarged, 1915. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; 8vo., 856 pp., with 272 illustrations, 27 of them in colours. Price, 18s. 6d.

THE CLINICS OF JOHN B. MURPHY, M.D., Vol. III., No. VI. (Published bi-monthly), 1914. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; 8vo., 175 pp., 51 illustrations. Price, per year, 35s.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., Vol. IV., No. I., February, 1915 (Published bi-monthly). Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; 8vo., 185 pp., 41 illustrations. Price, per year, 35s.

Diary for the Month.

July 6.—N.S.W. Branch, B.M.A., Council (Quarterly).
July 7.—Vict. Branch, B.M.A., Monthly.
July 8.—Vict. Branch, B.M.A., Council.
July 9.—S. Aust. Branch, B.M.A., Council.
July 9.—N.S.W. Branch, B.M.A., Clinical Evening.
July 13.—Tas. Branch, B.M.A., Monthly and Council.
July 14.—Melb. Pædiatric Soc.
July 14.—Western Med. Assoc. (Cowra), N.S.W.
July 16.—E. Suburbs Med. Assoc., N.S.W., General.
July 17.—N. Suburbs Med. Assoc., N.S.W., General.
July 20.—N.S.W. Branch, B.M.A., Executive and Finance Committee, Ethics Committee.
July 21.—Vict. Branch, B.M.A., Clinical Evening.
July 21.—W. Suburbs Med. Assoc., N.S.W., Clinical Evening.
July 21.—W. Aust. Branch, B.M.A., General.
July 23.—Q. Branch, B.M.A., Council.
July 27.—Vict. Branch, B.M.A., Eye and Ear Section.
July 27.—N.S.W. Branch, B.M.A., Organization and Science Committee, Medical Politics Committee.
July 28.—Vict. Branch, B.M.A., Council.
July 29.—South Aust. Branch, B.M.A., Monthly.
July 30.—N.S.W. Branch, B.M.A., Ordinary.

Covers for binding *The Medical Journal of Australia* for Vol. I., 1915, can be obtained on application to the Manager, B.M.A. Building, 30-34 Elizabeth Street, Sydney. The price of a cloth cover is 2s., and of half leather 3s. 6d.; postage, 7d.

Important Notice.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
QUEENSLAND. (Hon. Sec. B.M.A. Building, Adelaide Street, Brisbane).	Brisbane United F.S. Institute. F.S. Lodges at Longreach.
WESTERN AUSTRALIA. (Hon. Sec. 230 St. George's Terrace, Perth).	Swan District Medical Officer. All Contract Practice Appointments in W.A
NEW SOUTH WALES. (Hon. Sec. 30-34 Elizabeth Street, Sydney).	Australian Natives Association. Balmain United F.S. Dispensary. Burwood District F.S. Institute. Canterbury United F.S. Dispensary. Goulburn F.S. Association. Leichhardt and Petersham Dispensary. M.U. Oddfellows Med. Inst., Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. Mullumbimby District Friendly Societies. N.S.W. Ambulance Association and Transport Brigade. N. Sydney United F.S. People's Prudential Benefit Society. Phœnix Mutual Provident Society. F.S. Lodges at Braidwood. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Mudgee. F.S. Lodges at Orange. F.S. Lodges at Parramatta, Penrith, and Auburn. F.S. Lodges at Wellington. Newcastle Collieries— Killingworth. Seaham Nos. 1 and 2. West Wallsend.
SOUTH AUSTRALIA. (Hon. Sec. 3 North Terrace, Adelaide).	The F.S. Medical Assoc. Incorp., Adelaide.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to "The Medical Journal of Australia" alone, unless the contrary be stated.

All communications should be addressed to "The Editor," "The Medical Journal of Australia," B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.